

SECTION 09 06 00
SCHEDULE FOR FINISHES

PART I - GENERAL

1.1 DESCRIPTION

This section contains a coordinated system in which requirements for materials specified in other sections shown are identified by abbreviated material names and finish codes in the room finish schedule or shown for other locations.

1.2 MANUFACTURERS

Manufacturer's trade names and numbers used herein are only to identify colors, finishes, textures and patterns. Products of other manufacturer's equivalent to colors, finishes, textures and patterns of manufacturers listed that meet requirements of technical specifications will be acceptable upon approval in writing prior to bid date by Resident Engineer and Architect.

1.3 SUBMITALS

Submit in accordance with SECTION 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES—provide quadruplicate samples for color approval of materials and finishes specified in this section.

1.4 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in text by basic designation only.
- B. MASTER PAINTING INSTITUTE: (MPI)
 - 2001.....Architectural Painting Specification Manual

PART 2- PRODUCTS

2.1 DIVISION 03 - CONCRETE

A. SECTION 03 45 00, PRECAST ARCHITECTURAL CONCRETE

Finish Color	Texture	Finish	Manufacturer	Mfg. Color Name/No.
Match Existing	Match Existing	Match Existing	Hanson Structural Precast	Match Existing

2.2 DIVISION 04 - MASONRY

A. Section 04 05 13, MASONRY MORTARING

Finish Code	Manufacturer	Mfg. Color Name
	Local Types N, S and M	Natural

B. Section 04 20 00, UNIT MASONRY

1. FACE BRICK (FB)				
Finish Code	Size	Pattern	Manufacturer	Mfg. Color Name/No.
FB-1	Modular	Stain (Smooth)	Robinson Brick	Larimer

2. CONCRETE MASONRY UNIT (CMU)				
Type	Size	Pattern	Finish	Mfg. Color Name/No.
CMU Standard	Nominal 6"x8"x16"	Running	Regular face	Natural Grey

C. Section 04 72 00, CAST STONE MASONRY

Material	Size	Color, Texture, Finish, Grain	Pattern	Stone Source
Calcium Silicate Masonry Units	Nominal 12x24x4	Driftwood, Sandblasted (Match Existing)	Match Existing	Arriscraft International

2.3 DIVISION 05 - METALS

A. SECTION 05 12 00, STRUCTURAL STEEL FRAMING

Component	Finish	Color
Structural Steel	Shop Prime per specifications (do not prime items to receive spray-on fireproofing)	-

B. SECTION 05 31 00, STEEL DECKING, SECTION 05 36 00, COMPOSITE METAL DECKING

Component	Color
Steel Deck	See Specs
Composite Deck	See Specs

C. SECTION 05 50 00, METAL FABRICATION

Item	Finish	Color
Handrails (interior)	Prime and Paint	P-2
Guardrails (interior)	Prime and Paint	P-2
Stair Stringers	Prime and Paint	P-2
Underside of Stairs	Prime and Paint	P-1 (terminate at inside corner)
Steel Pipe Railings (exterior)	Prime and Paint	P-6
Edge Guards Angles for Opening in Slabs	Prime	-
Steel Grating and Frames	Galvanize Grating/Prime Frames	-
Loose Lintels	Prime and Paint	P-6
Steel Ladders (exterior)	Hot-Dip Galvanize, Prime and Paint	P-7
Steel Ladders (interior)	Prime and Paint	P-2
Steel Ladder Rungs and Brackets	Match ladder	Match ladder

2.4 DIVISION 06 WOOD, PLASTICS, AND COMPOSITES

A. SECTION 06 20 00, FINISH CARPENTRY, MILLWORK AND COUNTERTOPS

Type	Finish/Color
Plastic Laminate (horizontal surfaces) PL-1	Wilsonart Soft Gold Mesh, 4911-38
Plastic Laminate (vertical surfaces) PL-2	Wilsonart Shaker Cherry, 7935-07
Chemical Resistant Plastic Laminate PL-3	Wilsonart Soft Gold Mesh, 4911-60
Solid Surface SS-1	Corian Raffia
Integral Solid Surface Sinks	Corian Bisque
Quartz Q-1	Zodiaq Toasted Almond
Eco Resin Panel ERP-1	3Form Varia EcoResin in custom toffee color + Caramel color weave, Sandstone finish front and back
Impact Resistant Wall Covering FRP-2	Plastic Laminate, Wilsonart, Shaker Cherry, 7935-07

B. SECTION 06 20 00, FINISH CARPENTRY, MILLWORK AND COUNTERTOPS - WINDOW SILLS (Interior sills)

Room No. and Name	Material	Finish
All 3 rd floor exterior windows in rooms receiving new finishes	Solid Surface (Molded Resin)	Corian Raffia

2.5 DIVISION 07 - THERMAL AND MOISTURE PROTECTION

A. SECTION 07 40 00, ROOFING AND SIDING PANELS

Type	Shape	Ext. Finish	Manufacturer	Mfg. Color Name/No.
Wall Panels	HR-16	As Selected by Architect from Samples	Berridge	-
Soffit Panels	Vented FW-12	As Selected by Architect from Samples	Berridge	-

B. SECTION 07 54 23, THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

Finish	Manufacturer	Mfg. Color Name/No.
White	See Specs	White

C. SECTION 07 60 00, FLASHING AND SHEET METAL

Item	Material	Finish
Copings	Galvanized Steel	Fluorocarbon Finish
Exposed Flashings	Galvanized Steel	Fluorocarbon Finish

D. SECTION 07 71 00, ROOF SPECIALITIES

Item	Material	Finish	Manufacturer	Color
Roof Hatch	Steel	Prime and Paint	Bilco	P-7

E. SECTION 07 92 00, JOINT SEALANTS

Location	Color	Manufacturer	Manufacturer Color
Masonry Expansion Joints	By Architect from Samples		
Precast Concrete Panels	By Architect from Samples		
New to Existing Walls	By Architect from Samples		
Building Expansion Joints	By Architect from Samples		
Masonry Sealed Joints	By Architect from Samples		
Stone Sealed Joints	By Architect from Samples		

F. SECTION 07 95 13, EXPANSION JOINT COVER ASSEMBLIES

	Material	Finish	Manufacturer	Mfg. Model No.
Floor Component Cover Plate (interior only)	Aluminum	Clear Anodized	C/S Group	PC-400
Wall Component Cover Plate (interior only)	Aluminum	Clear Anodized	C/S Group	AFW & AFWC Series 2", 4" and 6"
Ceiling Component Cover Plate (interior only)	Aluminum	Clear Anodized	C/S Group	AFW & AFWC Series 2" and 6"
Exterior Wall Cover Plate	Aluminum	Mill	C/S Group	ESC-400 and ESC-600
Roof Covers	Aluminum	Mill	C/S Group	SRJ-600 and SRJW-600

2.6 DIVISION 08 - OPENINGS

A. SECTION 08 11 13, HOLLOW METAL DOORS AND FRAMES

Paint both sides of door and frames same color	
Component	Color of Paint Type and Gloss
Door (Interior)	P-2 / Semi-Gloss
Frame (Interior)	P-2 / Semi-Gloss
Window frame (Interior)	P-2 / Semi-Gloss
Door (Exterior)	P-6 / Semi-Gloss
Frame (Exterior)	P-6 / Semi-Gloss

B. SECTION 08 14 00, WOOD DOORS

Component	Finish/Color
Doors	Select White Birch - Clear

C. SECTION 08 31 13, ACCESS DOORS AND FRAMES

Material	Finish/Color
Steel	P-1

D. SECTION 08 41 13, EXTERIOR ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

Material	Finish	Manufacturer	Manufacturer Color Name/No.
Aluminum	Anodized	Kawneer	Bronze, Selected by Architect
Glass	G-1 and G-2	AGC or PPG	See Section 08 80 00

E. SECTION 08 41 13, INTERIOR ICU-STYLE DOOR SYSTEMS

Material	Finish	Manufacturer	Manufacturer Color Name/No.
Aluminum	Anodized	Besam Entrance Solutions	Clear Anodized
Glass	G-1	AGC or PPG	Clear Tempered

F. SECTION 08 63 00, METAL-FRAMED SKYLIGHTS

Component	Material	Manufacturer	Mfg. Color Name/No.
Frame	Aluminum	Kalwall	Aluminum (Fluoropolymer Coated)
Glazing	Translucent Fiberglass	Kalwall	White

G. SECTION 08 71 00, BUILDERS HARDWARE

Item	Material	Finish
Door Hardware	See Specs	See Specs

H. SECTION 08 80 00, GLAZING

Glazing Type	Manufacturer	Mfg. Color Name/No.
G-1	PPG or AGC	Clear Tempered
G-2	PPG or AGC	Bronze Tempered, Final color as selected by Architect
G-3	Pilkington	Mirropane T.M.
G-4	FireLite Plus	Clear

I. SECTION 08 90 00, LOUVERS AND WALL VENTS

Item	Material	Finish	Manufacturer	Mfg. Color Name/No.
Louver	Aluminum	Kynar500/Hylar 5000	Ruskin	As Selected by Architect

2.7 DIVISION 09 - FINISHES

A. SECTION 09 30 13, CERAMIC TILING

1. CERAMIC MOSAIC TILE (FT)					
Color	Size	Shape	Pattern	Manufacturer	Mfg. Color Name/No.
Oro Miele CR83	2" x 2"	Square	Costa Rei	American Olean	Oro Miele CR83

2. SECTION 09 30 13, CERAMIC TILING		
Finish Code	Manufacturer	Mfg. Color Name/No
CT-1	American Olean	Costa Rei, Oro Miele CR83, 12" x 12"
CT-2	American Olean	Costa Rei, Oro Meile CR83, Bullnose 3" x 12"

3. SECTION 09 30 13, GROUT		
Finish Code	Manufacturer	Mfg. Color Name/No.
GT-1	Laticrete	Mushroom, 39

4. SECTION 09 30 13, MARBLE THRESHOLDS		
Marble Type	Manufacturer	Mfg. Color Name/No.
Thassos	American Olean	White Marble M420

B. SECTION 09 51 00, ACOUSTICAL CEILINGS

Finish Code	Component	Color Pattern	Manufacturer	Mfg Name/No.
	Exposed Suspension System	White	Armstrong Ceiling Systems	Prelude XL 15/16" Exposed Tee System
AT-1	Type III Form 2	White	Armstrong Ceiling Systems	Fissured, 755
AT-2	Type III Form 2	White	Armstrong Ceiling Systems	Dune Second Look, 2712
AT-3	Type VXX	White	Gold Bond	Gridstone Gypsum Ceiling Panels with 2-mil vinyl laminate finish

C. SECTION 09 65 13, RESILIENT BASE STAIR TREADS AND ACCESSORIES

Finish Code	Item	Height	Manufacturer	Mfg Name/No.
RB-1	Rubber Base (RB)	4 ½"	Johnsonite	Diplomat Cinnamon, MW-76-A
RB-2	Rubber Base (RB)	4"	Johnsonite	Cove Cinnamon, DC-76
RB-3	Rubber Base (RB)	4"	Johnsonite	Silhouette Cinnamon, MW-76-J
RST-1	Resilient Stair Treads and Riser (RST)		Johnsonite	Raised Square Tread/Riser Cinnamon, RTR-SQ
IRB-1	Integral Rubber Base	6"	Nora	Sanitary Base Mother of Pearl, 1581
PEW-1	Resilient Chair Rail	3"	Johnsonite	Fortis Cinnamon, CHR-76

D. SECTION 09 65 16, VINYL SHEET FLOORING (VSF)

Finish Code	Pattern name	Manufacturer	Mfg. Color Name/No.
VSF-1	Beechnut	Teknoflor	Natural Collection, 52209
VSF-2	Medium Walnut	Teknoflor	Fireside Collection, 31097
VSF-3	Juparana Taupe	Teknoflor	Granite II Collection, 8652
VSF-4	Comera	Teknoflor	Agate Collection, 09023
VSF-5	Apple	Teknoflor	Rainscapes Collection, 22005

E. SECTION 09 65 16, VINYL SHEET FLOORING, HEAT WELDED SEAMS (WSF)

Finish Code	Pattern name	Manufacturer	Mfg. Color Name/No.
WSF-1	WR52209	Teknoflor	To match VSF-1
WSF-2	WR8652	Teknoflor	To match VSF-3

F. SECTION 09 65 16, RUBBER SHEET FLOORING (SRF)

Finish Code	Item	Height	Manufacturer	Mfg Name/No.
SRF-1	Sheet Rubber Flooring (SRF)	3.0 mm sheet	Nora	Noraplan /Environcare Morning Dew, 2946
SRF-2	Sheet Rubber Flooring (SRF)	3.0 mm sheet	Nora	Noraplan /Environcare Sage, 2949

H. SECTION 09 68 00, CARPET (CP)

Finish Code	Pattern	Manufacture	Mfg. Color Name/No.
CP-1	Karira 40003	Tandus	Burnished Copper, 01608
CP-2	Hercules NOP	Van Dijk	Zinc, 06

1. SECTION 09 68 00, CARPET EDGE STRIP			
Finish Code	Material	Manufacturer	Mfg. Color Name/No.
CES-01	Metal	Schluter	Anodized Aluminum
CES-02	Vinyl	Johnsonite	Cinnamon, 76

I. SECTION 09 72 16, VINYL COATED FABRIC WALLCOVERING (W)

Finish Code	Manufacturer	Mfg. Color Name/No.
W-1	Maharam	Sari 399426, Goldenrod 025
W-2	MDC, Bolta	Jessamine Skipping Stone, BB-JE-17
W-3	MDC, Bolta	Jessamine So Succulent, BB-JE-11

J. SECTION 09 91 00, PAINT AND COATINGS

1. MPI Gloss and Sheen Standards

		Gloss @60	Sheen @85
Gloss Level 1	a traditional matte finish-flat	max 5 units, and	max 10 units
Gloss Level 2	a high side sheen flat-"a velvet-like" finish	max 10 units, and	10-35 units
Gloss Level 3	a traditional "egg-shell like" finish	10-25 units, and	10-35 units
Gloss Level 4	a "satin-like" finish	20-35 units, and	min. 35 units
Gloss Level 5	a traditional semi-gloss	35-70 units	
Gloss Level 6	a traditional gloss	70-85 units	
Gloss level 7	a high gloss	more than 85 units	

2. Paint code	Gloss	Manufacturer	Mfg. Color Name/No.
P-1	Level 5	Sherwin Williams	Antique White, SW6119
P-2	Level 5	Sherwin Williams	Camelback, SW6122
P-3	Level 5	Sherwin Williams	Ruskin Room Green, SW0042
P-4	Level 5	Sherwin Williams	Golden Fleece, SW6388
P-5	Level 5	Benjamin Moore	Cloudy Sky, 2122-30
P-6	Level 5	Sherwin Williams	Bronze to match storefronts
P-7	Level 5	Sherwin Williams	Match color selected for metal wall panels at penthouse
Mechanical and Electrical Identification Painting	Refer to Painting Specification		

2.8 DIVISION 10 - SPECIALTIES

A. SECTION 10 14 00, INTERIOR SIGNS

Sign Type	Component	Manufacturer	Mfg. Color Name/No.
Arch Fusion 29	See Schedule	Takeform	See Schedule and Spec

B. SECTION 10 21 23, HOSPITAL CUBICLE CURTAINS AND INTRAVENOUS SUPPORT TRACKS

Finish Code	Manufacturer	Mfg. Color Name/No.
	Kirsh Company	9600 Series

C. SECTION 10 26 00, WALL GUARDS AND CORNER GUARDS

Item	Material	Manufacturer	Mfg. Color Name/No.
Corner Guards	Acrovyn 3000	Construction Specialties	Desert Sand, 102
Wall Guards and Handrail	Acrovyn 3000	Construction Specialties	Desert Sand, 102
Wall Guard	Acrovyn 3000	Construction Specialties	Desert Sand, 102
Impact Resistant Wall Covering FRP-1	Glasbord	Crane Composites	Pebbled Embossed Finish Ivory, 84
Top cap and trim pieces for FRP-1 (PEW-2)	-	Crane Composites	Cap Ivory, CP-84 and trim pieces, Ivory 84

D. SECTION 10 44 13, FIRE EXTINGUISHER CABINETS

Component	Material	Finish
Cabinet Face	Stainless Steel	-
Glazing	1/4" Tempered Glass	Clear
Extinguishers	Steel	Red

E. SECTION 10 50 00, METAL LOCKERS

Component	Finish	Manufacturer	Mfg. Color Name/No.
Locker	Powder-Coated Steel	General Storage Systems	As Selected by Architect
Accessories	Powder-Coated Steel	General Storage Systems	As Selected by Architect

2.9 DIVISION 12 - FURNISHINGS

A. SECTION 12 24 00, WINDOW SHADES

Component	Material	Manufacturer	Mfg. Color Name/No.
Shade Cloth	See Specs	MechoShades	0911 Porcelain
Support Hardware	See Specs	MechoShades	-

2.10 DIVISION 22 - PLUMBING

A. SECTION 22 40 00, PLUMBING FIXTURES AND TRIM

Item	Color
Water Closet	White
Counter-Mounted Sinks	Stainless Steel
Scrub Sinks	White
Lavatories	White
Mop Sink	White
Service Sink	White
Shower Pan	As Selected by Architect from Samples
Drinking Fountains	Stainless Steel
Patient Swingettes	Tops - Corian Raffia Base - Arvinyl, Flamenco Cherry #806250 - 7 mil
Utility Boxes and Covers	Stainless Steel

2.11 DIVISON 26 - ELECTRICAL

A. SECTION 26 51 00, BUILDING LIGHTING INTERIOR

Fixture Type	Exterior Finish	Color
See Luminaire Schedule	-	-

PART III EXECUTION

3.1 FINISH SCHEDULES & MISCELLANEOUS ABBREVIATIONS

FINISH SCHEDULE & MISCELLANEOUS ABBREVIATIONS	
Term	Abbreviation
Access Flooring	AF
Accordion Folding Partition	AFP
Acoustical Ceiling	AT
Acoustical Ceiling, Special Faced	AT (SP)
Acoustical Metal Pan Ceiling	AMP
Acoustical Wall Panel	AWP
Acoustical Wall Treatment	AWT
Acoustical Wallcovering	AWF
Anodized Aluminum Colored	AAC
Anodized Aluminum Natural Finish	AA
Baked On Enamel	BE
Brick Face	BR
Brick Flooring	BF
Brick Paving	BP
Carpet	CP
Carpet Athletic Flooring	CAF

Carpet Module Tile	CPT
Ceramic Glazed Facing Brick	CGFB
Ceramic Mosaic Tile	FTCT
Concrete	C
Concrete Masonry Unit	CMU
Divider Strips Marble	DS MB
Epoxy Coating	EC
Epoxy Resin Flooring	ERF
Existing	E
Exposed Divider Strips	EXP
Exterior	EXT
Exterior Finish System	EFS
Exterior Paint	EXT-P
Exterior Stain	EXT-ST
Fabric Wallcovering	WF
Facing Tile	SCT
Feature Strips	FS
Floor Mats & Frames	FM
Floor Tile, Mosaic	FT
Fluorocarbon	FC
Folding Panel Partition	FP
Foot Grille	FG
Glass Masonry Unit	GUMU
Glazed Face CMU	GCMU
Glazed Structural Facing Tile	SFTU

Granite	GT
Gypsum Wallboard	GWB
High Glazed Coating	SC
Latex Mastic Flooring	LM
Linear Metal Ceiling	LMC
Linear Wood Ceiling	LWC
Marble	MB
Material	MAT
Mortar	M
Multi-Color Coating	MC
Natural Finish	NF
Paint	P
Paver Tile	PVT
Perforated Metal Facing (Tile or Panels)	PMF
Plaster	PL
Plaster High Strength	HSPL
Plaster Keene Cement	KC
Plastic Laminate	HPDL
Polypropylene Fabric Wallcovering	PFW
Porcelain Paver Tile	PPT
Quarry Tile	QT
Radiant Ceiling Panel System	RCP
Resilient Stair Tread	RST
Rubber Base	RB

Rubber Tile Flooring	RT
Spandrel Glass	SLG
Stain	ST
Stone Flooring	SF
Structural Clay	SC
Suspension Decorative Grids	SDG
Terrazzo Portland Cement	PCT
Terrazzo Tile	TT
Terrazzo, Thin Set	
Textured Gypsum Ceiling Panel	TGC
Textured Metal Ceiling Panel	TMC
Thin set Terrazzo	TST
Veneer Plaster	VP
Vinyl Base	VB
Vinyl Coated Fabric Wallcovering	W
Vinyl Composition Tile	VCT
Vinyl Sheet Flooring	VSF
Vinyl Sheet Flooring (Welded Seams)	WSF
Wall Border	WB
Wood	WD

3.2 FINISH SCHEDULE SYMBOLS

Symbol Definition

** Same finish as adjoining walls
 - No color required
 E Existing
 XX To match existing
 EFTR Existing finish to remain
 RM Remove

3.3 ROOM FINISH SCHEDULE

A. Match adjoining or existing similar surfaces colors, textures or patterns where disturbed or damaged by alterations or new work when not scheduled.

B. ROOM FINISH SCHEDULE

Room No. and Name		FLOOR			BASE		WALL		WAINSCOT		CEILING	REMARKS
Temp Triage	E X I S T	MAT EFTR	F C		MAT	FCC	MAT	FCC	MAT	FC	MAT	FCC
				N	EFTR		EFTR		-		EFTR	COORDINATE WITH C15 CORRIDOR FINISHES ONCE TEMPORARY WALL IS REMOVED.
				E	EFTR		EFTR		-			
				S	EFTR		P-1		-			
				W	EFTR		EFTR		-			
				C	-		-		-			
109 Exam 111 Exam	E X I S T	E		N	EFTR		EFTR		-		EFTR	COORDINATE WITH VA BOISE INTERIOR DESIGNER FOR SPECIFICATION TO MATCH EXISTING FINISH.
				E	EFTR		EFTR		-			
				S	EFTR		XX		-			
				W	EFTR		EFTR		-			
				C	-		-		-			
112 Check-in	N E W	CP-1		N	RB-1		P-1/W-2		-		AT-2/ P-1/ P-5	SEE FLOOR FINISH PLAN, SEE REFLECTED CEILING PLAN, SEE INTERIOR ELEVATIONS
				E	RB-1		W-1/W-2		-			
				S	RB-1		-		-			
				W	RB-1		P-1/ W-1		-			
				C	-		-		-			

112A Admittin g	N E W	CP-1		N	RB-1		P-1		-		AT-2	
				E	RB-1		P-1		-			
				S	RB-1		P-1		-			
				W	RB-1		P-1		-			
				C	-		-		-			
112B Triage 112E Break Room C16D Hall C16E Hall	N E W	VSF-1		N	RB-2		P-1		-		AT-1	
				E	RB-2		P-1		-			
				S	RB-2		P-1		-			
				W	RB-2		P-1		-			
				C	-		-		-			
112D Housekee ping	N E W	VSF-4		N	RB-2		P-1		FRP- 1		AT-1	USE MATCHING COLOR DIVISION BARS AND INSIDE CORNERS WHERE NECESSARY FOR FRP-1. P-1 EPOXY PAINT ALL WALLS THIS ROOM.
				E	RB-2		P-1		FRP- 1			
				S	RB-2		P-1		FRP- 1			
				W	RB-2		P-1		FRP- 1			
				C	-		-		PEW- 2			

112F Waiting	N E W	CP-1		N	RB-1		W-1		-		AT-2/ P-5	QUARTZ TOP CAP (Q-1) AT EAST PARTITION WALL ONLY; CHAIR RAIL (PEW-1) AT WEST WALL ONLY, SEE INTERIOR ELEVATIONS, SEE REFLECTED CEILING PLAN
				E	RB-1		ERP-1		FRP-2			
				S	RB-1		W-1		-			
				W	RB-1		W-2		FRP-2			
				C	-		Q-1		PEW-1			
112G Electric al 112H Electric al	N E W	-		N	RB-2		P-1		-		P-1	
				E	RB-2		P-1		-			
				S	RB-2		P-1		-			
				W	RB-2		P-1		-			
				C	-		-		-			
112J Closet	N E W	VSF-1		N	RB-2		P-1		-		P-1	
				E	RB-2		P-1		-			
				S	RB-2		P-1		-			
				W	RB-2		P-1		-			
				C	-		-		-			
112K Toilet	N E W	CT-1/ FT-1		N	CT-1		P-1		CT-1		P-1	SEE INTERIOR ELEVATIONS, SEE FLOOR FINISH PLAN, PROVIDE CT-1 FROM FINISHED FLOOR TO FINISHED CEILING AT SHOWER WALLS. P-1 EPOXY PAINT ALL WALLS AND SHOWER CEILING THIS ROOM.
				E	CT-1		P-1		CT-1			
				S	CT-1		P-1		CT-1			
				W	CT-1		P-1		CT-1			
				C	-		-		CT-2			

116 Decontamination	N E W	FT-1		N	CT-1		CT-1		-		P-1	P-1 EPOXY PAINT ALL WALLS AND CEILING THIS ROOM.
				E	CT-1		CT-1		-			
				S	CT-1		CT-1		-			
				W	CT-1		CT-1		-			
				C	-		-		-			
C15 Corridor	N E W	VSF-1/ VSF-2		N	RB-1		-		-		AT-2/ P-1/ P-5	SEE FLOOR FINISH PLAN, SEE INTERIOR ELEVATIONS (SIMILAR), SEE REFLECTED CEILING PLAN, QUARTZ TOP CAP (Q-1) AND WALL PANEL WAINSCOT (FRP-2) AT WEST PARTITION WALL ONLY. PROVIDE FINISHES AS SPECIFIED UNDER BASE BID. SEE ARCHITECTURAL BID ALTERNATE SHEET.
				E	RB-1		W-1		-			
				S	RB-1		W-1					
				W	RB-1		W-1/ERP-1		FRP-2			
				C	-		Q-1		-			
C16 Corridor	N E W	VSF-1/ VSF-2/ VSF-3/ VSF-4		N	RB-1		W-1		-		AT-2/ P-1	SEE FLOOR FINISH PLAN, SEE REFLECTED CEILING PLAN, SEE ENLARGED FLOOR FINISH PLAN.
				E	RB-1		W-1		-			
				S	RB-1		W-1		-			
				W	RB-1		W-1		-			
				C	-		-		-			
C16B Vestibule	E X I S T	CP-2		N	RB-1		P-1		-		AT-2	REMOVE EXISTING FINISHES. PATCH/FILL SURFACES TO RECEIVE NEW FINISH.
				E	RB-1		P-1		-			
				S	RB-1		P-1		-			
				W	RB-1		P-1		-			
				C	-		-		-			

C16C Vestibul e	N E W	CP-2		N	RB-1		P-1		-		AT-2	
				E	RB-1		P-1		-			
				S	RB-1		P-1		-			
				W	RB-1		P-1		-			
				C	-		-		-			
ST14 Stair	N E W	VSF-3/ RST-1		N	RB-2		P-1		-		-	EXTEND FINISHES OF STAIR TOWER FROM FIRST FLOOR TO PENTHOUSE LEVEL.
				E	RB-2		P-1		-			
				S	RB-2		P-1		-			
				W	RB-2		P-1		-			
				C	-		-		-			
226 235	E X I S T	E		N	EFTR		EFTR		-		EFTR	COORDINATE WITH VA BOISE INTERIOR DESIGNER FOR SPECIFICATION TO MATCH EXISTING FINISH.
				E	EFTR		EFTR		-			
				S	EFTR		XX		-			
				W	EFTR		EFTR		-			
				C	-		-		-			
ST24 Stair	N E W	VSF-3/ RST-1		N	RB-2		P-1		-		-	EXTEND FINISHES OF STAIR TOWER FROM FIRST FLOOR TO PENTHOUSE LEVEL.
				E	RB-2		P-1		-			
				S	RB-2		P-1		-			
				W	RB-2		P-1		-			
				C	-		-		-			
308C O.R. 2 308F O.R. 1	E X I S T	SRF-1/ SRF-2		N	IRB-1		P-1		-		P-1	REMOVE EXISTING FINISHES. PATCH/FILL SURFACES TO RECEIVE NEW FINISH. EXISTING FINISHES TO REMAIN AS BID ALTERNATE.
				E	IRB-1		P-1		-			
				S	IRB-1		P-1		-			
				W	IRB-1		P-1		-			
				C	-		-		-			

308D Anesthesia Workroom	E X I S T	SRF-1		N	IRB-1		P-1		-		AT-1	REMOVE EXISTING FINISHES. PATCH/FILL SURFACES TO RECEIVE NEW FINISH. EXISTING FINISHES TO REMAIN AS BID ALTERNATE.
				E	IRB-1		P-1		-			
				S	IRB-1		P-1		-			
				W	IRB-1		P-1		-			
				C	-		-		-			
309A ICU Surgery Storage	E X I S T	VSF-4		N	RB-2		P-1		FRP-1		AT-1	USE MATCHING COLOR DIVISION BARS AND INSIDE CORNERS WHERE NECESSARY FOR FRP-1, REMOVE EXISTING FINISHES. PATCH/FILL SURFACES TO RECEIVE NEW FINISH.
				E	RB-2		P-1		FRP-1			
				S	RB-2		P-1		FRP-1			
				W	RB-2		P-1		FRP-1			
				C	-		-		PEW-2			
310 Suture Storage	N E W	SRF-1		N	IRB-1		P-1		-		AT-1	PROVIDE FINISHES AS SPECIFIED UNDER BASE BID. SEE ARCHITECTURAL BID ALTERNATE SHEET.
				E	IRB-1		P-1		-			
				S	IRB-1		P-1		-			
				W	IRB-1		P-1		-			
				C	-		-		-			

311 Orthopedic Storage	N E W	SRF-1		N	IRB-1		P-1		FRP-1		AT-1	USE MATCHING COLOR DIVISION BARS AND INSIDE CORNERS WHERE NECESSARY FOR FRP-1, PROVIDE FINISHES AS SPECIFIED UNDER BASE BID. SEE ARCHITECTURAL BID ALTERNATE SHEET.
				E	IRB-1		P-1		FRP-1			
				S	IRB-1		P-1		FRP-1			
				W	IRB-1		P-1		FRP-1			
				C	-		-		PEW-2			
325 Classroom	N E W	CP-1		N	RB-3		P-1		-		AT-2	
				E	RB-3		P-1		-			
				S	RB-3		P-1		-			
				W	RB-3		P-1		-			
				C	-		-		-			
326 ICU/ Surgery Waiting	N E W	CP-1		N	RB-1		W-1		FRP-2		AT-2	QUARTZ TOP CAP (Q-1) AT WEST PARTITION WALL ONLY; CHAIR RAIL (PEW-1) AT N, E, S WALLS, SEE INTERIOR ELEVATIONS
				E	RB-1		W-1		FRP-2			
				S	RB-1		W-1		FRP-2			
				W	RB-1		ERP-1		FRP-2			
				C	-		Q-1		PEW-1			

327 Consulta tion Room	N E W	CP-1		N	RB-1		W-2		-		AT-2	
				E	RB-1		W-2		-			
				S	RB-1		W-2		-			
				W	RB-1		W-2		-			
				C	-		-		-			
328 Women's Restroom 329 Men's Restroom 354 Staff Toilet	N E W	CT-1		N	CT-1		P-1		CT-1		P-1	SEE INTERIOR ELEVATIONS. P-1 EPOXY PAINT ALL WALLS THESE ROOMS.
				E	CT-1		P-1		CT-1			
				S	CT-1		P-1		CT-1			
				W	CT-1		P-1		CT-1			
				C	-		-		CT-2			
330 Nurse Station	N E W	VSF-1		N	RB-3		-		-		AT-2/ P-1/P-5	SEE REFLECTED CEILING PLAN, SEE FLOOR FINISH PLAN
				E	RB-3		-		-			
				S	RB-3		-		-			
				W	RB-3		W-2		-			
				C	-		-		-			
330A Gas Storage	N E W	VSF-1		N	RB-2		P-1		-		P-1	
				E	RB-2		P-1		-			
				S	RB-2		P-1		-			
				W	RB-2		P-1		-			
				C	-		-		-			

331 Iso Patient Room 1 333 Iso Patient Room 3	N E W	VSF-1		N	RB-3		W-2		-		P-1	PROVIDE FINISHES AS SPECIFIED UNDER BASE BID. SEE ARCHITECTURAL BID ALTERNATE SHEET.
				E	RB-3		W-2		-			
				S	RB-3		W-2		-			
				W	RB-3		W-2		-			
				C	-		-		-			
332 Iso Patient Room 334 Iso Patient Room	N E W	VSF-1		N	RB-3		W-3		-		P-1	PROVIDE FINISHES AS SPECIFIED UNDER BASE BID. SEE ARCHITECTURAL BID ALTERNATE SHEET.
				E	RB-3		W-3		-			
				S	RB-3		W-3		-			
				W	RB-3		W-3		-			
				C	-		-		-			
335 Patient Room 5 337 Patient Room 7 338 Patient Room 9	N E W	VSF-1		N	RB-3		W-2		-		AT-2	PROVIDE FINISHES AS SPECIFIED UNDER BASE BID. SEE ARCHITECTURAL BID ALTERNATE SHEET.
				E	RB-3		W-2		-			
				S	RB-3		W-2		-			
				W	RB-3		W-2		-			
				C	-		-		-			
336 Patient Room 6 339 Patient Room 10 341 Patient Room 8	N E W	VSF-1		N	RB-3		W-3		-		AT-2	PROVIDE FINISHES AS SPECIFIED UNDER BASE BID. SEE ARCHITECTURAL BID ALTERNATE SHEET.
				E	RB-3		W-3		-			
				S	RB-3		W-3		-			
				W	RB-3		W-3		-			
				C	-		-		-			

340 Alcove Storage	N E W	VSF-2		N	RB-3		P-1		FRP-2		AT-2/P-1	SEE FLOOR FINISH PLAN, SEE REFLECTED CEILING PLAN, SEE INTERIOR ELEVATIONS, CHAIR RAIL (PEW-1) AT N WALL ONLY WHERE FRP-2 IS LOCATED
				E	RB-3		-		-			
				S	RB-3		P-1		-			
				W	RB-3		-		-			
				C	-		-		PEW-1			
342 Clean Linen 345 Clean Utility	N E W	VSF-4		N	RB-2		P-1		FRP-1		AT-1	USE MATCHING COLOR DIVISION BARS AND INSIDE CORNERS WHERE NECESSARY FOR FRP-1. P-1 EPOXY PAINT ALL WALLS THESE ROOMS.
				E	RB-2		P-1		FRP-1			
				S	RB-2		P-1		FRP-1			
				W	RB-2		P-1		FRP-1			
				C	-		-		PEW-2			
343 Head Nurse Office	N E W	CP-1		N	RB-2		P-1		-		AT-1	
				E	RB-2		P-1		-			
				S	RB-2		P-1		-			
				W	RB-2		P-1		-			

352 House Staff Work Room 353 Staff Locker 357 Clinical Nurse Speciali st				C	-		-		-			
348 Staff Lounge 350 Conferen ce Report	N E W	VSF-1		N	RB-2		P-1		-		AT-1	
				E	RB-2		P-1		-			
				S	RB-2		P-1		-			
				W	RB-2		P-1		-			
				C	-		-		-			
344 Med Storage 347 Nourishm ent	N E W	VSF-4		N	RB-2		P-1		-		AT-1	P-1 EPOXY PAINT ALL WALLS THESE ROOMS.
				E	RB-2		P-1		-			
				S	RB-2		P-1		-			
				W	RB-2		P-1		-			
				C	-		-		-			

349 Soil Utility 356 Equipment Storage	N E W	VSF-4		N	RB-2		P-1		FRP-1		AT-1	USE MATCHING COLOR DIVISION BARS AND INSIDE CORNERS WHERE NECESSARY FOR FRP-1. P-1 EPOXY PAINT ALL WALLS THESE ROOMS.
				E	RB-2		P-1		FRP-1			
				S	RB-2		P-1		FRP-1			
				W	RB-2		P-1		FRP-1			
				C	-		-		PEW-2			
351 Patient Shower	N E W	FT-1		N	CT-1		CT-1		-		P-1	SEE INTERIOR ELEVATIONS. P-1 EPOXY PAINT ON CEILING.
				E	CT-1		CT-1		-			
				S	CT-1		CT-1		-			
				W	CT-1		CT-1		-			
				C	-		-		-			
353A Dressing	N E W	CP-1		N	RB-2		P-1		-		P-1	
				E	RB-2		P-1		-			
				S	RB-2		P-1		-			
				W	RB-2		P-1		-			
				C	-		-		-			

355 HSKP	N E W	VSF-4		N	RB-2		P-1		FRP-1		P-1	USE MATCHING COLOR DIVISION BARS AND INSIDE CORNERS WHERE NECESSARY FOR FRP-1. P-1 EPOXY PAINT ALL WALLS AND CEILING THIS ROOM.
				E	RB-2		P-1		FRP-1			
				S	RB-2		P-1		FRP-1			
				W	RB-2		P-1		FRP-1			
				C	-		-		PEW-2			
358 P.A.C.U.	N E W	VSF-1/ VSF-2		N	RB-3		P-1		-		AT-2	SEE FLOOR FINISH PLAN, SEE INTERIOR ELEVATIONS, PROVIDE FINISHES AS SPECIFIED UNDER BASE BID. SEE ARCHITECTURAL BID ALTERNATE SHEET. P-1 EPOXY PAINT ALL WALLS THIS ROOM.
				E	RB-3		P-1		-			
				S	RB-3		P-1		FRP-2			
				W	RB-3		P-1		-			
				C	-		-		PEW-1			
360 O.R. 3 362 O.R. 4	N E W	SRF-1/ SRF-2		N	IRB-1		P-1		-		P-1	SEE FLOOR FINISH PLAN, PROVIDE FINISHES AS SPECIFIED UNDER BASE BID. SEE ARCHITECTURAL BID ALTERNATE SHEET. P-1 EPOXY PAINT ALL WALLS AND CEILING THESE ROOMS.
				E	IRB-1		P-1		-			
				S	IRB-1		P-1		-			
				W	IRB-1		P-1		-			
				C	-		-		-			

361 Scrub 361A Sub- Sterile/ Supply 363 Clean Supply	N E W	SRF-1		N	IRB-1		P-1		FRP-1		AT-1	USE MATCHING COLOR DIVISION BARS AND INSIDE CORNERS WHERE NECESSARY FOR FRP-1, SEE INTERIOR ELEVATIONS, PROVIDE FINISHES AS SPECIFIED UNDER BASE BID. SEE ARCHITECTURAL BID ALTERNATE SHEET. P-1 EPOXY PAINT ALL WALLS THESE ROOMS.
				E	IRB-1		P-1		FRP-1			
				S	IRB-1		P-1		FRP-1			
				W	IRB-1		P-1		FRP-1			
				C	-		-		PEW-2			
C34 Public Corridor C37 Public Corridor	N E W	VSF-1		N	RB-1		W-1		-		AT-2	
				E	RB-1		W-1		-			
				S	RB-1		W-1		-			
				W	RB-1		W-1		-			
				C	-		-		-			
C36 Public Corridor	N E W	VSF-1/ VSF-2		N	RB-1		W-1		-		AT-2	QUARTZ TOP CAP (Q-1) AND WALL PANEL WAINSCOT (FRP-2) AT EAST PARTITION WALL ONLY, SEE INTERIOR ELEVATIONS, SEE FLOOR FINISH
				E	RB-1		W-1/ERP-1		FRP-2			
				S	RB-1		W-1		-			
				W	RB-1		W-1		-			
				C	-		Q-1		-			
C38 ICU Hall	N E W	VSF-1/ VSF-2		N	RB-3		P-1		-		AT-2/ P-1/P-5	SEE FLOOR FINISH PLAN, SEE REFLECTED CEILING PLAN
				E	RB-3		P-1		-			
				S	RB-3		P-1		-			
				W	RB-3		P-1		-			
				C	-		-		-			

C39 ICU Hall	N E W	VSF-1/ VSF-2		N	RB-3		P-1		-		AT-2/ P-1/P-5	SEE FLOOR FINISH PLAN, SEE REFLECTED CEILING PLAN
				E	RB-3		W-2		-			
				S	RB-3		P-1		-			
				W	RB-3		P-1		-			
				C	-		-		-			
C40 ICU Hall	N E W	VSF-1/ VSF-2		N	RB-3		P-1		-		AT-2	SEE FLOOR FINISH PLAN
				E	RB-3		-		-			
				S	RB-3		P-1		-			
				W	RB-3		P-1		-			
				C	-		-		-			
C41 Staff Corridor	N E W	VSF-1		N	RB-3		P-1		-		AT-1	
				E	RB-3		P-1		-			
				S	RB-3		P-1		-			
				W	RB-3		P-1		-			
				C	-		-		-			
C42 Public Corridor	N E W	VSF-1		N	RB-1		W-1		-		AT-2	
				E	RB-1		-		-			
				S	RB-1		W-1		-			
				W	RB-1		W-1		-			
				C	-		-		-			
C43 Public Corridor	N E W	VSF-1		N	RB-1		W-1		-		AT-2	
				E	RB-1		W-1		-			
				S	RB-1		W-1		-			
				W	RB-1		W-1		-			
				C	-		-		-			

C44 Clean Hall	N E W	SRF-1		N	IRB-1		P-1		FRP-1		AT-1	USE MATCHING COLOR DIVISION BARS AND INSIDE CORNERS WHERE NECESSARY FOR FRP-1, SEE INTERIOR ELEVATIONS PROVIDE FINISHES AS SPECIFIED UNDER BASE BID. SEE ARCHITECTURAL BID ALTERNATE SHEET.
				E	IRB-1		P-1		FRP-1			
				S	IRB-1		P-1		FRP-1			
				W	IRB-1		P-1		FRP-1			
				C	-		-		PEW-2			
ST34 Stair	N E W	VSF-3/ RST-1		N	RB-2		P-1		-		-	EXTEND FINISHES OF STAIR TOWER FROM FIRST FLOOR TO PENTHOUSE LEVEL.
				E	RB-2		P-1		-			
				S	RB-2		P-1		-			
				W	RB-2		P-1		-			
				C	-		-		-			
PH4 Penthous e PH5 Comm Room PH6 Elec Room	N E W	-		N	RB-2		P-1		-		-	
				E	RB-2		P-1		-			
				S	RB-2		P-1		-			
				W	RB-2		P-1		-			
				C	-		-		-			
ST44 Stair	N E W	VSF-3/ RST-1		N	RB-2		P-1		-		P-1	EXTEND FINISHES OF STAIR TOWER FROM FIRST FLOOR TO PENTHOUSE LEVEL.
				E	RB-2		P-1		-			
				S	RB-2		P-1		-			
				W	RB-2		P-1		-			
				C	-		-		-			

--- E N D---

SECTION 09 22 16
NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies steel studs wall systems, shaft wall systems, ceiling or soffit suspended, wall furring, fasteners, and accessories for the screw attachment of gypsum board, or other building boards.

1.2 RELATED WORK

- A. Load bearing framing: Section 05 40 00, COLD-FORMED METAL FRAMING.
- B. Support for wall mounted items: Section 05 50 00, METAL FABRICATIONS.
- C. Pull down tabs in steel decking: Section 05 36 00, COMPOSITE METAL DECKING.
- D. Ceiling suspension systems for acoustical tile: Section 09 51 00, ACOUSTICAL CEILINGS and

1.3 TERMINOLOGY

- A. Description of terms shall be in accordance with ASTM C754, ASTM C11, ASTM C841 and as specified.
- B. Underside of Structure Overhead: In spaces where steel beams are shown, the underside of structure overhead shall be the underside of the beams or metal deck above.
- C. Thickness of steel specified is the minimum bare (uncoated) steel thickness.

1.4 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data:
 - 1. Studs, runners and accessories.
 - 2. Hanger inserts.
 - 3. Channels (Rolled steel).
 - 4. Furring channels.
 - 5. Screws, clips and other fasteners.

1.5 DELIVERY, IDENTIFICATION, HANDLING AND STORAGE

In accordance with the requirements of ASTM C754.

1.6 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society For Testing And Materials (ASTM)
 - A123-09.....Zinc (Hot-dip Galvanized) Coatings on Iron and Steel Products

A653/A653M-09.....	Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process
A641-09.....	Zinc-Coated (Galvanized) Carbon Steel Wire
C11-10.....	Terminology Relating to Gypsum and Related Building Materials and Systems
C635-07.....	Manufacture, Performance, and Testing of Metal Suspension System for Acoustical Tile and Lay-in Panel Ceilings
C636-06.....	Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels
C645-09.....	Non-Structural Steel Framing Members
C754-09.....	Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products
C841-03(R2008).....	Installation of Interior Lathing and Furring
C954-07.....	Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness
C1002-07.....	Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
E580-09.....	Application of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Requiring Moderate Seismic Restraint.

PART 2 - PRODUCTS

2.1 PROTECTIVE COATING

Galvanize steel studs and runners (track), with coating designation of G-60 minimum, per ASTM 123.

2.2 STEEL STUDS AND RUNNERS (TRACK)

- A. ASTM C645, modified for thickness specified and sizes as shown.
 - 1. Use ASTM A525 steel, 0.75 mm (0.0296-inch) thick bare metal (20 gauge drywall) or 30 mil equivalent 24 gauge, as manufactured by Scafio "Supreme Framing System" or approved equal.
 - 2. Runners same thickness as studs.
- B. Provide not less than two cutouts in web of each stud, approximately 300 mm (12 inches) from each end, and intermediate cutouts on approximately 610 mm (24-inch) centers.
- C. Doubled studs for openings and studs for supporting concrete backer-board.
- D. Studs 3658 mm (12 feet) or less in length shall be in one piece.

E. Shaft Wall Framing:

1. C-H Studs.

2.3 FURRING CHANNELS AND COLUMN WALLBOARD SNAP CLIPS

- A. Rigid furring channels (hat shape): ASTM C645.
- B. Rolled Steel Channels: ASTM C754, cold rolled; or, ASTM C841, cold rolled.
- C. Column Drywall Clips: 2" deep by 2-3/8" wide by 2" high galvanized steel clips. Approved product: "The Claw" as manufactured by Claw International. Any substitutions must have a 3/4" body to the clip. Column drywall clips shall have a No. 25 MSG galvanized angle with 1-1/2" legs placed over clips before first layer of gypsum board per UL Design No. X536.

2.4 FASTENERS, CLIPS, AND OTHER METAL ACCESSORIES

- A. ASTM C754, except as otherwise specified.
- B. For fire rated construction: Type and size same as used in fire rating test.
- C. Fasteners for steel studs thicker than 0.84 mm (0.033-inch) thick. Use ASTM C954 steel drill screws of size and type recommended by the manufacturer of the material being fastened.
- D. Clips: ASTM C841 (paragraph 6.11), manufacturer's standard items. Clips used in lieu of tie wire shall have holding power equivalent to that provided by the tie wire for the specific application.
- E. Concrete ceiling hanger inserts (anchorage for hanger wire and hanger straps): Steel, zinc-coated (galvanized), manufacturers standard items, designed to support twice the hanger loads imposed and the type of hanger used.
- F. Tie Wire and Hanger Wire:
 1. ASTM A641, soft temper, Class 1 coating.
 2. Gage (diameter) as specified in ASTM C754 or ASTM C841.
- G. Power Actuated Fasteners: Type and size as recommended by the manufacturer of the material being fastened.
- H. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
 1. Minimum Base Metal Thickness: 0.033 inch (0.84 mm).

2.5 SUSPENDED CEILING SYSTEM FOR GYPSUM BOARD (OPTION)

- A. Conform to ASTM C635, heavy duty, with not less than 35 mm (1-3/8 inch) wide knurled capped flange face designed for screw attachment of gypsum board.
- B. Wall track channel with 35 mm (1-3/8 inch) wide flange.

PART 3 - EXECUTION

3.1 INSTALLATION CRITERIA

- A. Where fire rated construction is required for walls, partitions, columns, beams and floor-ceiling assemblies, the construction shall be same as that used in fire rating test.
- B. Construction requirements for fire rated assemblies and materials shall be as shown and specified, the provisions of the Scope paragraph (1.2) of ASTM C754 and ASTM C841 regarding details of construction shall not apply.

3.2 INSTALLING STUDS

- A. Install studs in accordance with ASTM C754, except as otherwise shown or specified.
- B. Space studs not more than 406 mm (16 inches) on center.
- C. When studs extend to underside of structure overhead, install a deflection top track capable of accommodating 1/2" of vertical movement after the building dead load is in place.
- D. Where studs are shown to terminate above suspended ceilings, provide bracing as shown or extend studs to underside of structure overhead.
- E. Extend studs to underside of structure overhead for fire rated partitions, smoke partitions, shafts and sound rated partitions.
- F. Openings:
 - 1. Frame jambs of openings in stud partitions and furring with two studs placed back to back or as shown.
 - 2. Fasten back to back studs together with 9 mm (3/8-inch) long Type S pan head screws at not less than 600 mm (two feet) on center, staggered along webs.
 - 3. Studs fastened flange to flange shall have splice plates on both sides approximately 50 X 75 mm (2 by 3 inches) screwed to each stud with two screws in each stud. Locate splice plates at 610 mm (24 inches) on center between runner tracks.
- G. Fastening Studs:
 - 1. Fasten studs located adjacent to partition intersections, corners and studs at jambs of openings to flange of runner tracks with two screws through each end of each stud and flange of runner.
 - 2. Do not fasten studs to top runner track when studs extend to underside of structure overhead.
- H. Chase Wall Partitions:
 - 1. Locate cross braces for chase wall partitions to permit the installation of pipes, conduits, carriers and similar items.
 - 2. Use studs or runners as cross bracing not less than 63 mm (2-1/2 inches wide).

- I. Form building seismic or expansion joints with double studs back to back spaced 75 mm (three inches) apart plus the width of the seismic or expansion joint.
- J. Form control joint, with double studs spaced 13 mm (1/2-inch) apart.

3.3 INSTALLING WALL FURRING FOR FINISH APPLIED TO ONE SIDE ONLY

- A. In accordance with ASTM C754, or ASTM C841 except as otherwise specified or shown.
- B. Wall furring-Stud System:
 - 1. Framed with 63 mm (2-1/2 inch) or narrower studs, 406 mm (16 inches) on center.
 - 2. Brace as specified in ASTM C754 for Wall Furring-Stud System or brace with sections or runners or studs placed horizontally at not less than three foot vertical intervals on side without finish.
 - 3. Securely fasten braces to each stud with two Type S pan head screws at each bearing.

3.4 INSTALLING SUPPORTS REQUIRED BY OTHER TRADES

- A. Provide for attachment and support of electrical outlets, plumbing, laboratory or heating fixtures, recessed type plumbing fixture accessories, access panel frames, wall bumpers, grab bars, marker boards, tackboards, wall-hung casework, handrail brackets, recessed fire extinguisher cabinets and other items like auto door buttons and auto door operators supported by stud construction.
- B. Provide additional studs where required. Install metal backing plates, or special metal shapes as required, securely fastened to metal studs.

3.5 INSTALLING SHAFT WALL SYSTEM

- A. Conform to GA File No. WP 705 for two-hour fire rating.
- B. Position J runners at floor and ceiling with the short leg toward finish side of wall. Securely attach runners to structural supports with power driven fasteners at both ends and 600 mm (24 inches) on center.
- C. After liner panels have been erected, cut C-H studs and E studs, from 9 mm (3/8-inch) to not more than 13 mm (1/2-inch) less than floor-to-ceiling height. Install C-H studs between liner panels with liner panels inserted in the groove.
- D. Install full-length steel E studs over shaft wall line at intersections, corners, hinged door jambs, columns, and both sides of closure panels.
- E. Suitably frame all openings to maintain structural support for wall:
 - 1. Provide necessary liner fillers and shims to conform to label frame requirements.
 - 2. Frame openings cut within a liner panel with E studs around perimeter.

3. Frame openings with vertical E studs at jambs, horizontal J runner at head and sill.

3.5 INSTALLING FURRED AND SUSPENDED CEILINGS OR SOFFITS

- A. Install furred and suspended ceilings or soffits in accordance with ASTM C754 or ASTM C841 except as otherwise specified or shown for screw attached gypsum board ceilings.
 1. Space framing at 406 mm (16-inch) centers for gypsum board anchorage.
- B. Concrete slabs on steel decking composite construction:
 1. Use pull down tabs when available.
 2. Use power activated fasteners when direct attachment to structural framing can not be accomplished.
- C. Where beams are more than 1219 mm (48 inches) apart, provide intermediate hangers so that spacing between supports does not exceed 1219 mm (48 inches). Use clips, bolts, or wire ties for direct attachment to steel framing.
- D. Existing concrete construction exposed or concrete on steel decking:
 1. Use power actuated fasteners either eye pin, threaded studs or drive pins for type of hanger attachment required.
 2. Install fasteners at approximate mid height of concrete beams or joists. Do not install in bottom of beams or joists.
- E. Steel decking without concrete topping:
 1. Do not fasten to steel decking 0.76 mm (0.0299-inch) or thinner.
 2. Toggle bolt to decking 0.9 mm (0.0359-inch) or thicker only where anchorage to steel framing is not possible.
- F. Installing suspended ceiling system for gypsum board (ASTM C635 Option):
 1. Install only for ceilings to receive screw attached gypsum board.
 2. Install in accordance with ASTM C636.
 - a. Install main runners spaced 1200 mm (48 inches) on center.
 - b. Install 1200 mm (four foot) tees not over 600 mm (24 inches) on center; locate for edge support of gypsum board.
 - c. Install wall track channel at perimeter.

3.6 TOLERANCES

- A. Fastening surface for application of subsequent materials shall not vary more than 3 mm (1/8-inch) from the layout line.
- B. Plumb and align vertical members within 3 mm (1/8-inch.)
- C. Level or align ceilings within 3 mm (1/8-inch.)

- - - E N D - - -

SECTION 09 29 00
GYPSON BOARD AND GYPSON SHEATHING

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies installation and finishing of gypsum board and gypsum sheathing board.

1.2 RELATED WORK

- A. Installation of steel framing members for walls, partitions, furring, soffits, and ceilings: Section 05 40 00, COLD-FORMED METAL FRAMING, and Section 09 22 16, NON-STRUCTURAL METAL FRAMING.
- B. Acoustical Sealants: Section 07 92 00, JOINT SEALANTS.
- C. Lay in gypsum board ceiling panels: Section 09 51 00, ACOUSTICAL CEILING.

1.3 TERMINOLOGY

- A. Definitions and description of terms shall be in accordance with ASTM C11, C840, and as specified.
- B. Underside of Structure Overhead: In spaces where steel beams are shown, the underside of structure overhead shall be the underside of the beams or metal deck above.
- C. "Yoked": Gypsum board cut out for opening with no joint at the opening (along door jamb or above the door).

1.4 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data:
 - 1. Cornerbead and edge trim.
 - 2. Finishing materials.
 - 3. Laminating adhesive.
 - 4. Gypsum board, each type.
- C. Shop Drawings:
 - 1. Typical sound rated assembly, showing treatment at perimeter of partitions and penetrations at gypsum board.

1.5 DELIVERY, IDENTIFICATION, HANDLING AND STORAGE

In accordance with the requirements of ASTM C840.

1.6 ENVIRONMENTAL CONDITIONS

In accordance with the requirements of ASTM C840.

1.7 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.

B. American Society for Testing And Materials (ASTM):

- C11-08.....Terminology Relating to Gypsum and Related
Building Materials and Systems
- C475-02.....Joint Compound and Joint Tape for Finishing
Gypsum Board
- C840-08.....Application and Finishing of Gypsum Board
- C919-08.....Sealants in Acoustical Applications
- C954-07.....Steel Drill Screws for the Application of Gypsum
Board or Metal Plaster Bases to Steel Stud from
0.033 in. (0.84mm) to 0.112 in. (2.84mm) in
thickness
- C1002-07.....Steel Self-Piercing Tapping Screws for the
Application of Gypsum Panel Products or Metal
Plaster Bases to Wood Studs or Steel Studs
- C1047-05.....Accessories for Gypsum Wallboard and Gypsum
Veneer Base
- C1177-06.....Glass Mat Gypsum Substrate for Use as Sheathing
- C1658-06.....Glass Mat Gypsum Panels
- C1396-06.....Gypsum Board
- E84-08.....Surface Burning Characteristics of Building
Materials

C. Underwriters Laboratories Inc. (UL):

Latest Edition.....Fire Resistance Directory

D. Inchcape Testing Services (ITS):

Latest Editions.....Certification Listings

PART 2 - PRODUCTS

2.1 GYPSUM BOARD

- A. Gypsum Board: ASTM C1396, Type X, 16 mm (5/8 inch) thick unless shown otherwise. Shall contain a minimum of 20 percent recycled gypsum.
- B. Coreboard or Shaft Wall Liner Panels.
 - 1. ASTM C1396, Type X.
 - 2. ASTM C1658: Glass Mat Gypsum Panels.
 - 3. Coreboard for shaft walls 406 mm (16 inches) wide by required lengths 25 mm (one inch) thick with paper faces treated to resist moisture.
- C. Gypsum cores shall contain a minimum of 95 percent post industrial recycled gypsum content. Paper facings shall contain 100 percent post-consumer recycled paper content.

2.2 GYPSUM SHEATHING BOARD

- A. ASTM C1396, Type X, water-resistant core surfaced with fiberglass mats, 16 mm (5/8 inch) thick, where located on drawings.

- B. ASTM C1396, water-resistant core surfaced with fiberglass mats, 13 mm (1/2 inch) thick, where located on drawings.
- C. ASTM C1177.
- D. Basis-of-Design: DensGlass Sheathing as manufactured by Georgia-Pacific Gypsum LLC.

2.3 ACCESSORIES

- A. ASTM C1047, except form of 0.39 mm (0.015 inch) thick zinc coated steel sheet or rigid PVC plastic.
- B. Flanges not less than 22 mm (7/8 inch) wide with punchouts or deformations as required to provide compound bond.

2.4 FASTENERS

- A. ASTM C1002 and ASTM C840, except as otherwise specified.
- B. ASTM C954, for steel studs thicker than 0.84 mm (0.033 inch).
- C. Select screws of size and type recommended by the manufacturer of the material being fastened.
- D. For fire rated construction, type and size same as used in fire rating test.
- E. Clips: Zinc-coated (galvanized) steel; gypsum board manufacturer's standard items.

2.5 FINISHING MATERIALS AND LAMINATING ADHESIVE

ASTM C475 and ASTM C840. Free of antifreeze, vinyl adhesives, preservatives, biocides and other VOC. Adhesive shall contain a maximum VOC content of 50 g/l.

PART 3 - EXECUTION

3.1 GYPSUM BOARD HEIGHTS

- A. Extend all layers of gypsum board from floor to underside of structure overhead on following partitions and furring:
 - 1. Two sides of partitions:
 - a. Fire rated partitions.
 - b. Smoke partitions.
 - c. Sound rated partitions.
 - d. Full height partitions shown (FHP).
 - 2. One side of partitions or furring:
 - a. Inside of exterior wall furring or stud construction.
 - b. Room side of room without suspended ceilings.
 - c. Furring for pipes and duct shafts, except where fire rated shaft wall construction is shown.
 - d. Corridor partitions.

3. Extend all layers of gypsum board construction used for fireproofing of columns from floor to underside of structure overhead, unless shown otherwise.
- B. In locations other than those specified, extend gypsum board from floor to heights as follows:
 1. Not less than 102 mm (4 inches) above suspended acoustical ceilings.
 2. At ceiling of suspended gypsum board ceilings.
 3. At existing ceilings.

3.2 INSTALLING GYPSUM BOARD

- A. Coordinate installation of gypsum board with other trades and related work.
- B. Install gypsum board in accordance with ASTM C840, except as otherwise specified.
- C. Moisture and Mold-Resistant Assemblies: Provide and install moisture and mold-resistant glass mat gypsum wallboard products with moisture-resistant surfaces complying with ASTM C1658 where shown and in locations which might be subject to moisture exposure during construction.
- D. Use gypsum boards in maximum practical lengths to minimize number of end joints.
- E. Bring gypsum board into contact, but do not force into place.
- F. Ceilings:
 1. For single-ply construction, use perpendicular application.
 2. For two-ply assemblies:
 - a. Use perpendicular application.
 - b. Apply face ply of gypsum board so that joints of face ply do not occur at joints of base ply with joints over framing members.
- G. Walls (Except Shaft Walls):
 1. When gypsum board is installed parallel to framing members, space fasteners 305 mm (12 inches) on center in field of the board, and 203 mm (8 inches) on center along edges.
 2. When gypsum board is installed perpendicular to framing members, space fasteners 305 mm (12 inches) on center in field and along edges.
 3. Stagger screws on abutting edges or ends.
 4. For single-ply construction, apply gypsum board with long dimension either parallel or perpendicular to framing members as required to minimize number of joints except gypsum board shall be applied vertically over "Z" furring channels.
 5. For two-ply gypsum board assemblies, apply base ply of gypsum board to assure minimum number of joints in face layer. Apply face ply of

- wallboard to base ply so that joints of face ply do not occur at joints of base ply with joints over framing members.
6. For three-ply gypsum board assemblies, apply plies in same manner as for two-ply assemblies, except that heads of fasteners need only be driven flush with surface for first and second plies. Apply third ply of wallboard in same manner as second ply of two-ply assembly, except use fasteners of sufficient length enough to have the same penetration into framing members as required for two-ply assemblies.
 7. No offset in exposed face of walls and partitions will be permitted because of single-ply and two-ply or three-ply application requirements.
 8. Control Joints ASTM C840 and as follows:
 - a. Locate at both side jambs of openings if gypsum board is not "yoked". Use one system throughout.
 - b. Not required for wall lengths less than 9144 mm (30 feet).
 - c. Extend control joints the full height of the wall or height of soffit/ceiling membrane.
- H. Acoustical or Sound Rated Partitions, Fire and Smoke Partitions:
1. Cut gypsum board for a space approximately 3 mm to 6 mm (1/8 to 1/4 inch) wide around partition perimeter.
 2. Coordinate for application of caulking or sealants to space prior to taping and finishing.
 3. For sound rated partitions, use sealing compound (ASTM C919) to fill the annular spaces between all receptacle boxes and the partition finish material through which the boxes protrude to seal all holes and/or openings on the back and sides of the boxes. STC minimum values as shown.
- I. Electrical and Telecommunications Boxes:
1. Seal annular spaces between electrical and telecommunications receptacle boxes and gypsum board partitions.
- J. Accessories:
1. Set accessories plumb, level and true to line, neatly mitered at corners and intersections, and securely attach to supporting surfaces as specified.
 2. Install in one piece, without the limits of the longest commercially available lengths.
 3. Corner Beads:
 - a. Install at all vertical and horizontal external corners and where shown.
 - b. Use screws only. Do not use crimping tool.
 4. Edge Trim (casings Beads):

- a. Where gypsum board terminates against dissimilar materials and at perimeter of openings, except where covered by flanges, casings or permanently built-in equipment.
- b. Where gypsum board surfaces of non-load bearing assemblies abut load bearing members.
- c. Where shown.

3.3 INSTALLING GYPSUM SHEATHING

- A. Install in accordance with ASTM C840, except as otherwise specified or shown.
- B. Use screws of sufficient length to secure sheathing to cold-formed metal framing.
- C. Space screws 9 mm (3/8 inch) from ends and edges of sheathing and 200 mm (8 inches) on center. Space screws a maximum of 203 mm (8 inches) on center on intermediate framing members.
- D. Apply 1200 mm by 2400 mm or 2700 mm (4 ft. by 8 ft. or 9 foot) gypsum sheathing boards vertically with edges over framing.

3.4 CAVITY SHAFT WALL

- A. Coordinate assembly with Section 09 22 16, NON-STRUCTURAL METAL FRAMING, for erection of framing and gypsum board.
- B. Conform to GA File No. WP 705 for two-hour fire rating
- C. Cut coreboard (liner) panels 25 mm (one inch) less than floor-to-ceiling height, and erect vertically between J-runners on shaft side.
 - 1. Where shaft walls exceed 4267 mm (14 feet) in height, position panel end joints within upper and lower third points of wall.
 - 2. Stagger joints top and bottom in adjacent panels.
- D. Gypsum Board:
 - 1. Two hour wall:
 - a. Erect base layer (backing board) vertically on finish side of wall with end joints staggered. Fasten base layer panels to studs with 25 mm (one inch) long screws, spaced 610 mm (24 inches) on center.
 - b. Use laminating adhesive between plies in accordance with UL or FM if required by fire test.
 - c. Apply face layer of gypsum board required by fire test vertically over base layer with joints staggered and attach with screws of sufficient length to secure to framing staggered from those in base, spaced 305 mm (12 inches) on center.
 - 2. One hour wall with one layer on finish side of wall: Apply face layer of gypsum board vertically. Attach to studs with screws of sufficient length to secure to framing, spaced 305 mm (12 inches) on center in field and along edges.

3. Where coreboard is covered with face layer of gypsum board, stagger joints of face layer from those in the coreboard base.

E. Treat joints, corners, and fasteners in face layer as specified for finishing of gypsum board.

3.5 FINISHING OF GYPSUM BOARD

A. Finish joints, edges, corners, and fastener heads in accordance with ASTM C840. Provide Level 3 finish at 1st and 2nd floor shell spaces, penthouse spaces, electrical and communications closets and above all ceilings. Otherwise Provide level 4 finish throughout entire project except use level 5 finish at the following locations:

1. 1st Floor: VESTIBULES C16B and C16C, Corridors C15 and C16, Check-In 112 and Waiting 112F.
2. 3rd Floor: Corridors C34, C36, C37, C42 and C43, Waiting Room 326, PACU 328, ICU Halls C38, C39 and C40, Alcove Storage 340, Men's Toilet 329, Women's Toilet 328, Nurse Station 330 and all Patient Rooms 331 through 341.

B. Before proceeding with installation of finishing materials, assure the following:

1. Gypsum board is fastened and held close to framing or furring.
2. Fastening heads in gypsum board are slightly below surface in dimple formed by driving tool.

C. Finish joints, fasteners, and all openings, including openings around penetrations, on that part of the gypsum board extending above suspended ceilings. Sanding is not required of surfaces above suspended ceilings.

3.6 REPAIRS

- A. After taping and finishing has been completed, and before decoration, repair all damaged and defective work, including nondecorated surfaces.
- B. Patch holes or openings 13 mm (1/2 inch) or less in diameter, or equivalent size, with a setting type finishing compound or patching plaster.
- C. Repair holes or openings over 13 mm (1/2 inch) diameter, or equivalent size, with 16 mm (5/8 inch) thick gypsum board secured in such a manner as to provide solid substrate equivalent to undamaged surface.
- D. Tape and refinish scratched, abraded or damaged finish surfaces including cracks and joints in non decorated surface to provide smoke tight construction, fire protection equivalent to the fire rated construction and STC equivalent to the sound rated construction as indicated on plans.

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SECTION 09 30 13
CERAMIC/PORCELAIN TILING

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies ceramic tile, marble thresholds, waterproofing membranes for shower pans, and crack isolation membranes.

1.2 RELATED WORK

- A. Sealing of joints where specified: Section 07 92 00, JOINT SEALANTS.
- B. Color, texture and pattern of field tile and trim shapes, size of field tile, trim shapes, and color of grout specified: Section 09 06 00, SCHEDULE FOR FINISHES.
- C. Metal and resilient edge strips at joints with new resilient flooring: Section 09 65 16, RESILIENT SHEET FLOORING.
- D. Cementitious Backer Units: Section 06 16 63, CEMENTITIOUS SHEATHING.
- E. Waterproofing Membrane applied to frame wall construction below cementitious backer units: Section 06 16 63, CEMENTITIOUS SHEATHING.

1.3 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Samples:
 - 1. Base tile, each type, each color, each size.
 - 2. Mosaic floor tile panels, 225 mm by 225 mm (9 inches by 9 inches), each type, color, size and pattern.
 - 3. Wall (or wainscot) tile, each color, size and pattern.
 - 4. Trim shapes, bullnose cap and cove including bullnose cap and base pieces at internal and external corners of vertical surfaces, each type, color, and size.
- C. Product Data:
 - 1. Ceramic, marked to show each type, size, and shape required.
 - 2. Waterproofing membrane for shower pan.
 - 3. Latex-Portland cement mortar and grout.

1.4 DELIVERY AND STORAGE

- A. Deliver materials in containers with labels legible and intact and grade-seals unbroken.
- B. Store material to prevent damage or contamination.

1.5 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in text by basic designation only.

B. American National Standards Institute (ANSI):

- A10.20-05.....Safety Requirements for Ceramic Tile, Terrazzo,
and Marble Works
- A108.1A-05.....Installation of Ceramic Tile in the Wet-Set
Method with Portland Cement Mortar
- A108.1B-05.....Installation of Ceramic Tile on a Cured Portland
Cement Mortar Setting Bed with dry-Set or latex-
Portland Cement Mortar
- A108.1C-05.....Contractors Option; Installation of Ceramic Tile
in the Wet-Set method with Portland Cement
Mortar or Installation of Ceramic Tile on a
Cured Portland Cement Mortar Setting Bed with
Dry-Set or Latex-Portland Cement Mortar
- A108.4-05.....Installation of Ceramic Tile with Organic
Adhesives or Water Cleanable Tile Setting Epoxy
Adhesives
- A108.5-05.....Installation of Ceramic Tile with Dry-Set
Portland Cement Mortar or Latex-Portland Cement
Mortar
- A108.6-05.....Installation of Ceramic Tile with Chemical
Resistant, Water Cleanable Tile-Setting and
Grouting Epoxy
- A108.8-05.....Installation of Ceramic Tile with Chemical
Resistant Furan Resin Mortar and Grout
- A108.10-05.....Installation of Grout in Tilework
- A108.11-05.....Interior Installation of Cementitious Backer
Units
- A108.13-05.....Installation of Load Bearing, Bonded, Waterproof
Membranes for Thin-Set Ceramic Tile and
Dimension Stone
- A118.1-05.....Dry-Set Portland Cement Mortar
- A118.3-05.....Chemical Resistant, Water Cleanable Tile-Setting
Epoxy and Water Cleanable Tile-Setting and
Grouting Epoxy Adhesive
- A118.4-05.....Latex-Portland Cement Mortar
- A118.5-05.....Chemical Resistant Furan Mortars and Grouts for
Tile Installation
- A118.6-05.....Standard Cement Grouts for Tile Installation
- A118.9-05.....Cementitious Backer Units

- A118.10-05.....Load Bearing, Bonded, Waterproof Membranes for
Thin-Set Ceramic Tile and Dimension Stone
Installation
- A136.1-05.....Organic Adhesives for Installation of Ceramic
Tile
- A137.1-88.....Ceramic Tile
- C. American Society For Testing And Materials (ASTM):
- A185-07.....Steel Welded Wire Fabric, Plain, for Concrete
Reinforcing
- C109/C109M-07.....Standard Test Method for Compressive Strength of
Hydraulic Cement Mortars (Using 2 inch. or [50-
mm] Cube Specimens)
- C241-90 (R2005).....Abrasion Resistance of Stone Subjected to Foot
Traffic
- C348-02.....Standard Test Method for Flexural Strength of
Hydraulic-Cement Mortars
- C627-93(R2007).....Evaluating Ceramic Floor Tile Installation
Systems Using the Robinson-Type Floor Tester
- C954-07.....Steel Drill Screws for the Application of Gypsum
Board on Metal Plaster Base to Steel Studs from
0.033 in (0.84 mm) to 0.112 in (2.84 mm) in
thickness
- C979-05.....Pigments for Integrally Colored Concrete
- C1002-07.....Steel Self-Piercing Tapping Screws for the
Application of Panel Products
- C1027-99(R2004).....Determining "Visible Abrasion Resistance on
Glazed Ceramic Tile"
- C1028-07.....Determining the Static Coefficient of Friction
of Ceramic Tile and Other Like Surfaces by the
Horizontal Dynamometer Pull Meter Method
- C1127-01.....Standard Guide for Use of High Solids Content,
Cold Liquid-Applied Elastomeric Waterproofing
Membrane with an Integral Wearing Surface
- C1178/C1178M-06.....Standard Specification for Coated Glass Mat
Water-Resistant Gypsum Backing Panel
- D4397-02.....Standard Specification for Polyethylene Sheeting
for Construction, Industrial and Agricultural
Applications
- D5109-99(R2004).....Standard Test Methods for Copper-Clad
Thermosetting Laminates for Printed Wiring
Boards

D. Marble Institute of America (MIA): Design Manual III-2007

E. Tile Council of America, Inc. (TCA):

2007.....Handbook for Ceramic Tile Installation

PART 2 - PRODUCTS

2.1 TILE

A. Comply with ANSI A137.1, Standard Grade, except as modified:

1. Inspection procedures listed under the Appendix of ANSI A137.1.
 2. Abrasion Resistance Classification:
 - a. Tested in accordance with ISO 10545-7.
 - b. Class 3 or better.
 3. Slip Resistant Tile for Floors:
 - a. Coefficient of friction, when tested in accordance with ASTM C1028, required for level of performance:
 - 1) Not less than 0.6 (wet condition) for shower areas.
 - 2) Not less than 0.7 for dry conditions.
 4. Mosaic tile may be mounted or joined together by a resinous bonding material along tile edges.
 5. Do not use back mounted tiles in showers unless certified by manufacturer as suitable for application in wet areas and with list of successful in-service performance locations.
 6. Factory Blending: For tile with color variations, within the ranges selected during sample submittals blend tile in the factory and package so tile units taken from one package show the same range in colors as those taken from other packages and match approved samples.
 7. Factory-Applied Temporary Protective Coating:
 - a. Protect exposed face surfaces (top surface) of tile against adherence of mortar and grout by pre-coating with a continuous film of petroleum paraffin wax, applied hot.
 - b. Do not coat unexposed tile surfaces.
- B. Unglazed Ceramic Mosaic Tile: Nominal 6 mm (1/4 inch) thick with cushion edges.
- C. Wall Tile: Cushion edges, glazing, as specified in Section 09 06 00, SCHEDULE FOR FINISHES.
- D. Trim Shapes:
1. Conform to applicable requirements of adjoining floor and wall tile.
 2. Use slip resistant trim shapes for horizontal surfaces of showers.
 3. Use trim shapes sizes conforming to size of adjoining field wall tile including existing spaces unless detailed or specified otherwise in Section 09 06 00, SCHEDULE FOR FINISHES.
 4. Internal and External Corners:

- a. Square internal and external corner joints are not acceptable.
- b. External corners including edges: Use bullnose shapes.
- c. Internal corners: Use cove shapes.
- d. Base to floor internal corners: Use special shapes providing integral cove vertical and horizontal joint.
- e. Base to floor external corners: Use special shapes providing bullnose vertical edge with integral cove horizontal joint. Use stop at bottom of openings having bullnose return to wall.
- f. Wall top edge internal corners: Use special shapes providing integral cove vertical joint with bullnose top edge.
- g. Wall top edge external corners: Use special shapes providing bullnose vertical and horizontal joint edge.
- h. For unglazed ceramic mosaic and glazed wall tile installed in dry-set Portland cement mortar, latex-Portland cement mortar, and organic adhesive (thin set methods), use cove and surface bullnose shapes as applicable.

2.2 SETTING MATERIALS OR BOND COATS

- A. Conform to TCA Handbook for Ceramic Tile Installation.
- B. Latex-Portland Cement Mortar: ANSI A118.4.
 - 1. For wall applications, provide non-sagging, latex-Portland cement mortar complying with ANSI A118.4.
 - 2. Prepackaged Dry-Mortar Mix: Factory-prepared mixture of Portland cement; dry, redispersible, ethylene vinyl acetate additive; and other ingredients to which only water needs to be added at Project site.
- C. Organic Adhesives: ANSI A136.1, Type 1.

2.3 WATERPROOF MEMBRANES (SHOWER PAN)

- A. General: Manufacturer's standard product that complies with ANSI A118.10 and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
- B. Chlorinated Polyethylene Sheet: Nonplasticized, chlorinated polyethylene faced on both sides with nonwoven polyester fabric; 0.030-inch nominal thickness.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Noble Company (The); Nobleseal TS.

2.4 GROUTING MATERIALS

A. Coloring Pigments:

1. Pure mineral pigments, limeproof and nonfading, complying with ASTM C979.
2. Add coloring pigments to grout by the manufacturer.
3. Job colored grout is not acceptable.

B. Polymer-Modified Tile Grout:

1. ANSI A118.7.
2. Polymer Type: Ethylene vinyl acetate or acrylic additive, in dry, redispersible form, prepackaged with other dry ingredients.

2.5 PATCHING AND LEVELING COMPOUND

- A. Portland cement base, polymer-modified, self-leveling compound, manufactured specifically for resurfacing and leveling concrete floors. Products containing gypsum are not acceptable.
- B. Shall have minimum following physical properties:
 1. Compressive strength - 25 MPa (3500 psig) per ASTM C109/C109M.
 2. Flexural strength - 7 MPa (1000 psig) per ASTM C348 (28 day value).
 3. Tensile strength - 600 psi per ANSI 118.7.
 4. Density - 1.9.
- C. Capable of being applied in layers up to 38 mm (1-1/2 inches) thick without fillers and up to 100 mm (four inches) thick with fillers, being brought to a feather edge, and being trowelled to a smooth finish.
- D. Primers, fillers, and reinforcement as required by manufacturer for application and substrate condition.
- E. Ready for use in 48 hours after application.

2.6 MARBLE

- A. Soundness Classification in accordance with MIA Design Manual III Groups.
- B. Thresholds:
 1. Group A, Minimum abrasive hardness (Ha) of 10.0 per ASTM C241.
 2. Honed finish on exposed faces.
 3. Thickness and contour as shown.
 4. Fabricate from one piece without holes, cracks, or open seams; full depth of wall or frame opening by full width of wall or frame opening; 19 mm (3/4-inch) minimum thickness and 6 mm (1/4-inch) minimum thickness at beveled edge.
 5. Set not more than 13 mm (1/2-inch) above adjoining finished floor surfaces, with transition edges beveled on a slope of no greater than

- 1:2. On existing floor slabs provide 13 mm (1/2-inch) above ceramic tile surface with bevel edge joint top flush with adjacent floor.
6. One piece full width of door opening. Notch thresholds to match profile of door jambs.

2.7 WATER

Clean, potable and free from salts and other injurious elements to mortar and grout materials.

2.8 CLEANING COMPOUNDS

- A. Specifically designed for cleaning masonry and concrete and which will not prevent bond of subsequent tile setting materials including patching and leveling compounds and elastomeric waterproofing membrane and coat.
- B. Materials containing acid or caustic material not acceptable.

2.9 FLOOR MORTAR BED REINFORCING

ASTM A185 welded wire fabric without backing, MW3 x MW3 (2 x 2-W0.5 x W0.5).

PART 3 - EXECUTION

3.1 ENVIRONMENTAL REQUIREMENTS

- A. Maintain ambient temperature of work areas at not less than 16 degree C (60 degrees F), without interruption, for not less than 24 hours before installation and not less than three days after installation.
- B. Maintain higher temperatures for a longer period of time where required by manufacturer's recommendation and ANSI Specifications for installation.
- C. Do not install tile when the temperature is above 38 degrees C (100 degrees F).
- D. Do not install materials when the temperature of the substrate is below 16 degrees C (60 degrees F).
- E. Do not allow temperature to fall below 10 degrees C (50 degrees F) after fourth day of completion of tile work.

3.2 ALLOWABLE TOLERANCE

- A. Variation in plane of sub-floor, including concrete fills leveling compounds and mortar beds:
 - 1. Not more than 1 in 1000 (1/8 inch in 10 feet) where latex-Portland cement mortar setting beds and chemical-resistant bond coats are used.
- B. Variation in Plane of Wall Surfaces:
 - 1. Not more than 1 in 800 (1/8 inch in eight feet) where latex-Portland cement mortar or organic adhesive setting materials is used.

3.3 SURFACE PREPARATION

A. Cleaning New Concrete or Masonry:

1. Chip out loose material, clean off all oil, grease dirt, adhesives, curing compounds, and other deterrents to bonding by mechanical method, or by using products specifically designed for cleaning concrete and masonry.
2. Use self-contained power blast cleaning systems to remove curing compounds and steel trowel finish from concrete slabs where ceramic tile will be installed directly on concrete surface with thin-set materials.
3. Steam cleaning or the use of acids and solvents for cleaning will not be permitted.

B. Patching and Leveling:

1. Mix and apply patching and leveling compound in accordance with manufacturer's instructions.
2. Fill holes and cracks and align concrete floors that are out of required plane with patching and leveling compound.
 - a. Thickness of compound as required to bring finish tile system to elevation shown.
 - b. Float finish.
 - c. At substrate expansion, isolation, and other moving joints, allow joint of same width to continue through underlayment.
3. Apply patching and leveling compound to concrete and masonry wall surfaces that are out of required plane.
4. Apply leveling coats of material compatible with wall surface and tile setting material to wall surfaces, other than concrete and masonry that are out of required plane.

C. Mortar Bed for Slopes to Drains:

1. Slope compound to drain where drains are shown.
2. Install mortar bed in depressed slab sloped to drains not less than 1 in 200 (1/16 inch per foot).
3. Allow not less than 50 mm (2 inch) depression at edge of depressed slab.
4. Screed for slope to drain and float finish.
5. Cure mortar bed for not less than seven days. Do not use curing compounds or coatings.

D. Walls:

1. In showers or other wet areas refer to Section 06 16 63, CEMENTITIOUS SHEATHING for sheathing and waterproofing requirements.
2. Apply patching and leveling compound to concrete and masonry surfaces that are out of required plane.

3. Apply leveling coats of material compatible with wall surface and tile setting material to wall surfaces, other than concrete and masonry that are out of required plane.

E. Existing Floors and Walls:

1. Remove existing composition floor finishes and adhesive. Prepare surface by grinding, chipping, self-contained power blast cleaning or other suitable mechanical methods to completely expose uncontaminated concrete or masonry surfaces. Follow safety requirements of ANSI A10.20.
2. Remove existing concrete fill or topping to structural slab. Clean and level the substrate for new setting bed and waterproof membrane.

3.4 MARBLE

- A. Secure thresholds in position with minimum of two stainless steel dowels.
- B. Set in latex-Portland cement mortar bond coat.
- C. Set threshold to finish 12mm (1/2 inch) above ceramic tile floor unless shown otherwise, with bevel edge joint top flush with adjacent floor similar to TCA detail TR611-02.

3.5 CERAMIC TILE - GENERAL

- A. Comply with ANSI A108 series of tile installation standards in "Specifications for Installation of Ceramic Tile" applicable to methods of installation.
- B. Comply with TCA Installation Guidelines:
- C. Installing Mortar Beds for Floors:
 1. Install mortar bed to not damage waterproof membrane/shower pan; 32 mm (1-1/2 inch) minimum thickness.
 2. Install floor mortar bed reinforcing centered in mortar fill.
 3. Screed finish to level plane or slope to drains where shown, float finish.
 4. For thin set systems cure mortar bed not less than seven days. Do not use curing compounds or coatings.
- D. Setting Beds or Bond Coats:
 1. Set wall tile installed over concrete backer board in latex-Portland cement mortar, ANSI A108.1B.
 2. Set trim shapes in same material specified for setting adjoining tile.
- E. Workmanship:
 1. Lay out tile work so that no tile less than one-half full size is used. Make all cuts on the outer edge of the field.
 2. Set tile firmly in place with finish surfaces in true planes. Align tile flush with adjacent tile unless shown otherwise.

3. Form intersections and returns accurately.
4. Cut and drill tile neatly without marring surface.
5. Cut edges of tile abutting penetrations, finish, or built-in items:
 - a. Fit tile closely around electrical outlets, piping, fixtures and fittings, so that plates, escutcheons, collars and flanges will overlap cut edge of tile.
 - b. Seal tile joints water tight as specified in Section 07 92 00, JOINT SEALANTS, around electrical outlets, piping fixtures and fittings before cover plates and escutcheons are set in place.
6. Completed work shall be free from hollow sounding areas and loose, cracked or defective tile.
7. Remove and reset tiles that are out of plane or misaligned.
8. Floors:
 - a. Extend floor tile beneath casework and equipment, except those units mounted in wall recesses.
 - b. Align finish surface of new tile work flush with other and existing adjoining floor finish where shown.
 - c. In areas where floor drains occur, slope to drains where shown.
 - d. Shove and vibrate tiles over 200 mm (8 inches) square to achieve full support of bond coat.
9. Walls:
 - a. Cover walls and partitions from floor to ceiling, or from floor to nominal wainscot heights shown with tile.
 - b. Finish reveals of openings with tile, except where other finish materials are shown or specified.
 - c. At window openings, provide tile stools and reveals, except where other finish materials are shown or specified.
 - d. Finish wall surfaces behind and at sides of casework and equipment, except those units mounted in wall recesses, with same tile as scheduled for room proper.
10. Joints:
 - a. Keep all joints in line, straight, level, perpendicular and of even width unless shown otherwise.
 - b. Make joints 2 mm (1/16 inch) wide for glazed wall tile and mosaic tile work.
11. Back Buttering: For installations indicated below, obtain 100 percent mortar coverage by complying with applicable special requirements for back buttering of tile in referenced ANSI A108 series of tile installation standards:
 - a. Tile wall installations in wet areas, including showers.

- b. Tile wall installations composed of tiles 200 by 200 mm (8 by 8 inches or larger).

3.6 THIN SET CERAMIC TILE INSTALLED WITH LATEX-PORTLAND CEMENT MORTAR

- A. Installation of Tile: ANSI A108.5, except as specified otherwise.
- B. Slope tile work to drains not less than 1 in 100 (1/8 inch per foot).

3.7 THIN SET CERAMIC AND PORCELAIN TILE INSTALLED WITH ORGANIC ADHESIVE

- A. Installation of Tile: ANSI A108.4.

3.8 CERAMIC TILE INSTALLED WITH WATERPROOFING MEMBRANCE/SHOWER PAN

- A. Surface Preparation: Prepare surfaces as specified in paragraph 3.3.
- B. Installation of Waterproofing Membrane.
 - 1. Prime surfaces, where required, in accordance with manufacturer's instructions.
 - 2. Install per manufacturer's recommendations.
 - 3. Extend material over flashing rings of drains and turn up vertical surfaces to overlap wall waterproofing not less than 100 mm (four inches).
 - 4. After installation, test for leaks with 25 mm (one inch) of water for 24 hours.

3.9 GROUTING

- A. Grout Type and Location:
 - 1. Grout for wall and base tile and unglazed mosaic tile: Polymer-modified grout.
- B. Workmanship:
 - 1. Install and cure grout in accordance with the applicable standard.

3.10 MOVEMENT JOINTS

- A. Prepare tile expansion, isolation, construction and contraction joints for installation of sealant. Refer to Section 07 92 00, JOINT SEALANTS.
- B. TCA details EJ 171-02.
- C. At expansion joints, rake out joint full depth of tile and setting bed and mortar bed. Do not cut waterproof membrane.
- D. Rake out grout at joints between tile at toe of base, and where shown not less than 6 mm (1/4 inch) deep.

3.11 CLEANING

- A. Thoroughly sponge and wash tile. Polish glazed surfaces with clean dry cloths.
- B. Methods and materials used shall not damage or impair appearance of tile surfaces.
- C. The use of acid or acid cleaners on glazed tile surfaces is prohibited.
- D. Clean tile as recommended by the manufacturer of the grout and bond coat.

3.12 PROTECTION

- A. Keep traffic off tile floor, until grout and setting material is firmly set and cured.
- B. Where traffic occurs over tile floor, cover tile floor with not less than 9 mm (3/8 inch) thick plywood, wood particle board, or hardboard securely taped in place. Do not remove protective cover until time for final inspection. Clean tile of any tape, adhesive and stains.

3.13 TESTING FINISH FLOOR

- A. Test floors in accordance with ASTM C627 to show compliance with codes 1 through 10.

- - - E N D - - -

**SECTION 09 51 00
ACOUSTICAL CEILINGS**

PART 1- GENERAL

1.1 DESCRIPTION

- A. Metal ceiling suspension system for acoustical ceilings.
- B. Acoustical units.

1.2 RELATED WORK

- A. Color, pattern, and location of each type of acoustical unit:
Section 09 06 00, SCHEDULE FOR FINISHES.

1.3 SUBMITTAL

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Samples:
 - 1. Acoustical units, each type, with label indicating conformance to specification requirements.
 - 2. Colored markers for units providing access.
- C. Manufacturer's Literature and Data:
 - 1. Ceiling suspension system, each type, showing complete details of installation, including suspension system specified to match existing and upward access system details for concealed grid systems.
 - 2. Acoustical units, each type

1.4 DEFINITIONS

- A. Standard definitions as defined in ASTM C634.
- B. Terminology as defined in ASTM E1264.

1.5 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in the text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - A641/A641M-03.....Zinc-coated (Galvanized) Carbon Steel Wire
 - A653/A653M-07.....Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-coated (Galvannealed) by the Hot-Dip Process
 - C423-07.....Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
 - C634-02 (E2007).....Standard Terminology Relating to Environmental Acoustics

C635-04.....	Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings
C636-06.....	Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels
E84-07.....	Surface Burning Characteristics of Building Materials
E119-07.....	Fire Tests of Building Construction and Materials
E413-04.....	Classification for Rating Sound Insulation.
E580-06.....	Application of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Requiring Seismic Restraint
E1264-(R2005).....	Classification for Acoustical Ceiling Products

PART 2- PRODUCTS

2.1 METAL SUSPENSION SYSTEM

- A. ASTM C635, heavy-duty system, except as otherwise specified.
 - 1. Ceiling suspension system members may be fabricated from either of the following unless specified otherwise.
 - a. Galvanized cold-rolled steel, bonderized.
 - b. Extruded aluminum.
 - 2. Use same construction for cross runners as main runners. Use of lighter-duty sections for cross runners is not acceptable.
- B. Exposed grid suspension system for support of lay-in panels:
 - 1. Exposed grid width not less than 22 mm (7/8 inch) with not less than 8 mm (5/16 inch) panel bearing surface.
 - 2. Fabricate wall molding and other special molding from the same material with same exposed width and finish as the exposed grid members.
 - 3. On exposed metal surfaces apply baked-on enamel flat texture finish in color to match adjacent acoustical units unless specified otherwise in Section 09 06 00, SCHEDULE FOR FINISHES.

2.2 PERIMETER SEAL

- A. Vinyl, polyethylene or polyurethane open cell sponge material having density of 1.3 plus or minus 10 percent, compression set less than 10 percent with pressure sensitive adhesive coating on one side.
- B. Thickness as required to fill voids between back of wall molding and finish wall.
- C. Not less than 9 mm (3/8 inch) wide strip.

2.3 WIRE

- A. ASTM A641.
- B. For wire hangers: Minimum diameter 2.68 mm (0.1055 inch).
- C. For bracing wires: Minimum diameter 3.43 mm (0.1350 inch).

2.4 ANCHORS AND INSERTS

- A. Use anchors or inserts to support twice the loads imposed by hangers attached thereto.
- B. Hanger Inserts:
 - 1. Fabricate inserts from steel, zinc-coated (galvanized after fabrication).
 - 2. Flush ceiling insert type:
 - a. Designed to provide a shell covered opening over a wire loop to permit attachment of hangers and keep concrete out of insert recess.
 - b. Insert opening inside shell approximately 16 mm (5/8 inch) wide by 9 mm (3/8 inch) high over top of wire.
 - c. Wire 5 mm (3/16 inch) diameter with length to provide positive hooked anchorage in concrete.
- C. Clips:
 - 1. Galvanized steel.
 - 2. Designed to clamp to steel beam or bar joists, or secure framing member together.
 - 3. Designed to rigidly secure framing members together.
 - 4. Designed to sustain twice the loads imposed by hangers or items supported.
- D. Tile Splines: ASTM C635.

2.5 CARRYING CHANNELS FOR SECONDARY FRAMING

- A. Fabricate from cold-rolled or hot-rolled steel, black asphaltic paint finish, free of rust.
- B. Weighing not less than the following, per 300 m (per thousand linear feet):

Size mm	Size Inches	Cold-rolled		Hot-rolled	
		Kg	Pound	Kg	Pound
38	1 1/2	215.4	475	508	1120
50	2	267.6	590	571.5	1260

2.6 ACOUSTICAL UNITS

- A. Acoustical Panels Type AT-1:
 - 1. Surface Texture: Medium
 - 2. Composition: Mineral Fiber

3. Color: White
4. Size 48" x 24" x 5/8"
5. Edge Profile: Square Lay-In for interface with Prelude Exposed Tee
6. Noise Reduction Coefficient (NRC): ASTM C 423; Classified with UL label on product carton, 0.55
7. Ceiling Attenuation Class (CAC): ASTM C 1414; Classified with UL label on product carton, 30
8. Emissions Testing: Section 01350 Protocol, <13.5 ppb of formaldehyde when used under typical conditions required by ASHRAE Standard 62.1-2004, "Ventilation for Acceptable Indoor Air Quality"
9. Flame Spread: ASTM E 1264; Class A (UL)
10. Light Reflectance (LR): ASTM E 1477; White Panel: Light Reflectance: 0.81
11. Dimensional Stability: Standard -Space is enclosed, weatherproofed, HVAC systems operating
12. Antimicrobial Protection: None
13. Acceptable Product: Fissured, 755 as manufactured by Armstrong World Industries

B. Acoustical Panels Type AT-2

1. Surface Texture: Fine
2. Composition: Mineral Fiber
3. Color: White
4. Size 48" x 24" x 3/4"
5. Edge Profile: Angled Tegular for interface with Prelude Exposed Tee
6. Noise Reduction Coefficient (NRC): ASTM C 423; Classified with UL label on product carton, 0.50
7. Ceiling Attenuation Class (CAC): ASTM C 1414; Classified with UL label on product carton, 35
8. Emissions Testing: Section 01350 Protocol, <13.5 ppb of formaldehyde when used under typical conditions required by ASHRAE Standard 62.1-2004, "Ventilation for Acceptable Indoor Air Quality"
9. Flame Spread: ASTM E 1264; Class A (UL)
10. Light Reflectance (LR): ASTM E 1477; White Panel: Light Reflectance: 0.83
11. Dimensional Stability: HumiGuard Plus - Temperature is between 32°F (0°C) and 120°F (49°C). It is not necessary for the area to be enclosed or for HVAC systems to be functioning. All wet work must be complete and dry.

12. Antimicrobial Protection: BioBlock Plus - Resistance against the growth of mold/mildew and gram positive and gram negative odor and stain causing bacteria.

13. Acceptable Product: Dune Second Look, 2712 as manufactured by Armstrong World Industries

C. Acoustical Panels Type AT-3

1. Surface Finish: 2 mil white stipple vinyl laminate

2. Composition: Gypsum Core

3. Color: White

4. Size 48" x 24" x 1/2"

5. Edge Profile: Square for interface with Prelude Exposed Tee

6. Sound Attenuation: ASTM E 1414, 43dB

7. Ceiling Attenuation Class (CAC): NGC Report #6098001

8. Flame Spread: ASTM E 84; 5

9. Light Reflectance (LR): 1 (75% or greater)

10. Acceptable Product: Gold Bond Gridstone Gypsum Ceiling Panels, GB 5045 as manufactured by National Gypsum Company

2.7 ACCESS IDENTIFICATION

A. Markers:

1. Use colored markers with pressure sensitive adhesive on one side.
2. Make colored markers of paper or plastic, 6 to 9 mm (1/4 to 3/8 inch) in diameter.

B. Use markers of the same diameter throughout building.

C. Color Code: Use following color markers for service identification:

Color.....Service

Red.....Sprinkler System: Valves and Controls

Green.....Domestic Water: Valves and Controls

Yellow.....Chilled Water and Heating Water

Orange.....Ductwork: Fire Dampers

Blue.....Ductwork: Dampers and Controls

Black.....Gas: Laboratory, Medical, Air and Vacuum

- D. The contractor installing the above listed service(s) shall be responsible for installing required colored markers for their own work. Contractor removing existing suspended ceilings shall be responsible for installing new color coded markers in locations that had markers.

PART 3 EXECUTION

3.1 CEILING TREATMENT

- A. Treatment of ceilings shall include sides and soffits of ceiling beams, furred work 600 mm (24 inches) wide and over, and vertical surfaces at

changes in ceiling heights unless otherwise shown. Install acoustic tiles after wet finishes have been installed and solvents have cured.

B. Lay out acoustical units symmetrically about center lines of each room or space unless shown otherwise on reflected ceiling plan.

C. Moldings:

1. Install metal wall molding at perimeter of room, column, or edge at vertical surfaces.
2. Install special shaped molding at changes in ceiling heights and at other breaks in ceiling construction to support acoustical units and to conceal their edges.

D. Perimeter Seal:

1. Install perimeter seal between vertical leg of wall molding and finish wall, partition, and other vertical surfaces.
2. Install perimeter seal to finish flush with exposed faces of horizontal legs of wall molding.

E. Existing ceiling:

1. Where extension of existing ceilings occur, match existing.
2. Where acoustical units are salvaged and reinstalled or joined, use salvaged units within a space. Do not mix new and salvaged units within a space which results in contrast between old and new acoustic units.
3. Comply with specifications for new acoustical units for new units required to match appearance of existing units.

3.2 CEILING SUSPENSION SYSTEM INSTALLATION

A. General:

1. Install metal suspension system for acoustical tile and lay-in panels in accordance with ASTM C636, except as specified otherwise.
2. Use direct or indirect hung suspension system or combination thereof as defined in ASTM C635.
3. Support a maximum area of 1.48 m² (16 sf) of ceiling per hanger.
4. Prevent deflection in excess of 1/360 of span of cross runner and main runner.
5. Provide extra hangers, minimum of one hanger at each corner of each item of mechanical, electrical and miscellaneous equipment supported by ceiling suspension system not having separate support or hangers.
6. Provide not less than 100 mm (4 inch) clearance from the exposed face of the acoustical units to the underside of ducts, pipe, conduit, secondary suspension channels, concrete beams or joists; and steel beam or bar joist unless furred system is shown,
7. Use main runners not less than 1200 mm (48 inches) in length.

8. Install hanger wires vertically. Angled wires are not acceptable except for seismic restraint bracing wires.
 9. Install end hangers at 200 mm (8 inches) maximum from wall, for main and cross runners.
 10. Attach hangers to main and cross runners to allow easy removal of acoustical tile and lay-in panels. All hangers shall be taut with 3 complete turns around self.
- B. Anchorage to Structure:
1. Concrete:
 - a. Install hanger inserts and wire loops required for support of hanger and bracing wire in concrete forms before concrete is placed. Install hanger wires with looped ends through steel deck if steel deck does not have attachment device.
 - b. Use eye pins or threaded studs with screw-on eyes in existing or already placed concrete structures to support hanger and bracing wire. Install in sides of concrete beams or joists at mid height.
 2. Steel:
 - a. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels for attachment of hanger wires.
 - (1) Size and space carrying channels to insure that the maximum deflection specified will not be exceeded.
 - (2) Attach hangers to steel carrying channels, spaced four feet on center, unless area supported or deflection exceeds the amount specified.
 - b. Attach carrying channels to the bottom flange of steel beams spaced not 1200 mm (4 feet) on center before fire proofing is installed. Weld or use steel clips to attach to beam to develop full strength of carrying channel.
- C. Direct Hung Suspension System:
1. As illustrated in ASTM C635.
 2. Support main runners by hanger wires attached directly to the structure overhead.
 3. Maximum spacing of hangers, 1200 mm (4 feet) on centers unless interference occurs by mechanical systems. Use indirect hung suspension system where not possible to maintain hanger spacing.
- D. Indirect Hung Suspension System:
1. As illustrated in ASTM C635.
 2. Space carrying channels for indirect hung suspension system not more than 1200 mm (4 feet) on center. Space hangers for carrying channels not more than 2400 mm (8 feet) on center or for carrying channels

less than 1200 mm (4 feet) or center so as to insure that specified requirements are not exceeded.

3. Support main runners by specially designed clips attached to carrying channels.

E. Seismic Ceiling Bracing System:

1. Construct system in accordance with ASTM E580.
2. Connect bracing wires to structure above as specified for anchorage to structure and to main runner or carrying channels of suspended ceiling at bottom.

3.3 ACOUSTICAL UNIT INSTALLATION

- A. Cut acoustic units for perimeter borders and penetrations to fit tight against penetration for joint not concealed by molding.
- B. Install lay-in acoustic panels in exposed grid with not less than 6 mm (1/4 inch) bearing at edges on supports.
 1. Install tile to lay level and in full contact with exposed grid.
 2. Replace cracked, broken, stained, dirty, or tile not cut for minimum bearing.
- C. Markers:
 1. Install markers of color code specified to identify the various concealed piping, mechanical, and plumbing systems.
 2. Attach colored markers to exposed grid on opposite sides of the units providing access.

3.5 CLEAN-UP AND COMPLETION

- A. Replace damaged, discolored, dirty, cracked and broken acoustical units.
- B. Leave finished work free from defects.

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SECTION 09 65 13
RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies the installation of rubber base, rubber chair rail, and resilient stair treads/risers.

1.2 RELATED WORK

- A. Color and texture: Section 09 06 00, SCHEDULE FOR FINISHES.
- B. Integral base with sheet flooring: Section 09 65 16, RESILIENT SHEET FLOORING.

1.3 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data:
 - 1. Description of each product.
 - 2. Base and stair material manufacturer's recommendations for adhesives.
 - 3. Application and installation instructions.
- C. Samples:
 - 1. Base: 150 mm (6 inches) long, each type and color.
 - 2. Resilient Stair Treads: 150 mm (6 inches) long.

1.4 DELIVERY

- A. Deliver materials to the site in original sealed packages or containers, clearly marked with the manufacturer's name or brand, type and color, production run number and date of manufacture.
- B. Materials from containers which have been distorted, damaged or opened prior to installation will be rejected.

1.5 STORAGE

- A. Store materials in weather tight and dry storage facility.
- B. Protect material from damage by handling and construction operations before, during, and after installation.

1.6 APPLICABLE PUBLICATIONS

- A. The publication listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - F1344-04.....Rubber Floor Tile
 - F1859-04.....Rubber Sheet Floor Covering without Backing
 - F1860-04.....Rubber Sheet Floor Covering with Backing
 - F1861-02.....Resilient Wall Base

C. Federal Specifications (Fed. Spec.):

RR-T-650E.....Treads, Metallic and Non-Metallic, Nonskid

PART 2 - PRODUCTS**2.1 GENERAL**

Use only products by the same manufacturer and from the same production run.

2.2 RESILIENT BASE

- A. ASTM F1861, 3 mm (1/8 inch) thick, 100 mm (4 inches) high, Type TP Rubber, Thermoplastics, Group 2-layered with molded top. Style B-cove.
- B. ASTM F-1861, 9.52 MM (3/8 inch) thick, 11.43 cm (4-1/2 inch) high, Type TP Rubber, Thermoplastics, Group 1. Style A-profile.
- C. ASTM F-1861, 3mm (1/8 inch) thick, 152 mm (5.96 inches) high. Style C-integral sanitary base.

2.3 RESILIENT TREADS WITH INTEGRATED RISER

- A. Rounded square raised disc pattern: 2" hinged, square nose configuration, .210" to .153" tapered tread with integral riser.
- B. Nosing shape to conform to sub-tread nosing shape.

2.4 RESILIENT CHAIR RAIL

- A. Manufactured from a homogeneous composition of polyvinyl chloride (PVC)
- B. ASTM E 648, Standard test method for critical radiant flux of 0.45 watts/cm², Class I
- C. Abrasion resistance: ASTM D 3389 - .22 mg/cycle
- D. Millwork chair rails to be 8 foot lengths per piece
- E. Thickness: 3/16", height 3"
- F. Acceptable product: Fortis resilient chair rail by Johnsonite.

2.5 PRIMER (FOR CONCRETE FLOORS)

As recommended by the adhesive and tile manufacturer.

2.6 LEVELING COMPOUND (FOR CONCRETE FLOORS)

Provide products with latex or polyvinyl acetate resins in the mix.

2.7 ADHESIVES

- A. Use products recommended by the material manufacturer for the conditions of use.
- B. Use low-VOC adhesive during installation. Water based adhesive with low VOC is preferred over solvent based adhesive.

PART 3 - EXECUTION**3.1 PROJECT CONDITIONS**

- A. Maintain temperature of materials above 21° C (70 °F), for 48 hours before installation.

- B. Maintain temperature of rooms where work occurs, between 21° C and 27° C (70°F and 80°F) for at least 48 hours, before, during, and after installation.
- C. Do not install materials until building is permanently enclosed and wet construction is complete, dry, and cured.

3.2 INSTALLATION REQUIREMENTS

- A. The respective manufacturer's instructions for application and installation will be considered for use when approved by the Resident Engineer.
- B. Submit proposed installation deviation from this specification to the Resident Engineer indicating the differences in the method of installation.
- C. The Resident Engineer reserves the right to have test portions of material installation removed to check for non-uniform adhesion and spotty adhesive coverage.

3.3 PREPARATION

- A. Examine surfaces on which material is to be installed.
- B. Fill cracks, pits, and dents with leveling compound.
- C. Level to 3 mm (1/8 inch) maximum variations.
- D. Do not use adhesive for leveling or filling.
- E. Grind, sand, or cut away protrusions; grind high spots.
- F. Clean substrate area of oil, grease, dust, paint, and deleterious substances.
- G. Substrate area dry and cured. Perform manufacturer's recommended bond and moisture test.
- H. Preparation of existing installation:
 - 1. Remove existing base and stair treads including adhesive.
 - 2. Do not use solvents to remove adhesives.
 - 3. Prepare substrate as specified.

3.4 BASE INSTALLATION

- A. Location:
 - 1. Unless otherwise specified or shown, where base is scheduled, install base over toe space of base of casework, lockers, and where other equipment occurs.
 - 2. Extend base scheduled for room into adjacent closet, alcoves, and around columns.
- B. Application:
 - 1. Apply adhesive uniformly with no bare spots.
 - 2. Set base with joints aligned and butted to touch for entire height.

3. Before starting installation, layout base material to provide the minimum number of joints with no strip less than 600 mm (24 inches) length.

a. Short pieces to save material will not be permitted.

b. Locate joints as remote from corners as the material lengths or the wall configuration will permit.

C. Form corners and end stops as follows:

1. Style B

a. Score back of outside corner.

b. Score face of inside corner and notch cove.

2. Style A

a. Miter inside and outside corners.

3. Style C

a. Use preformed corners as supplied by manufacturer.

D. Roll base for complete adhesion.

3.5 STAIR TREAD AND RISER INSTALLATION

A. Prepare surfaces to receive the treads and risers in accordance with applicable portions of paragraph, preparation.

B. Layout of Treads and Risers.

1. No joints will be accepted in treads.

2. Set full treads on intermediate and floor landings.

C. Application:

1. Apply adhesive uniformly with no bare spots.

2. Roll and pound treads and risers to assure adhesion.

3.6 CLEANING AND PROTECTION

A. Clean all exposed surfaces of base and adjoining areas of adhesive spatter before it sets.

B. Keep traffic off resilient material for at least 72 hours after installation.

C. Clean and polish materials in the following order:

1. After two weeks, scrub resilient base, and tread/riser materials with a minimum amount of water and a mild detergent. Leave surfaces clean and free of detergent residue. Polish resilient base to a gloss finish.

2. Do not polish tread and sheet rubber materials.

D. When construction traffic is anticipated, cover tread materials with reinforced kraft paper and plywood or hardboard properly secured and maintained until removal is directed by the Resident Engineer.

E. Where protective materials are removed and immediately prior to acceptance, replace damaged materials and re-clean resilient materials.

Damaged materials are defined as having cuts, gouges, scrapes or tears and not fully adhered.

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SECTION 09 65 16
RESILIENT SHEET FLOORING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This Section specifies vinyl sheet flooring and rubber sheet floor covering.
- B. Installation of sheet flooring including following:
 - 1. Heat welded seams.
 - 2. Cold welded seams to integral rubber base.

1.2 RELATED WORK

- A. Concrete floors: Section 03 30 00, CAST-IN-PLACE CONCRETE.
- B. Color, pattern and texture: Section 09 06 00, SCHEDULE FOR FINISHES.
- C. Integral rubber base: Section 09 65 13, RESILIENT BASE AND ACCESSORIES.

1.3 QUALITY CONTROL-QUALIFICATIONS:

- A. The Contracting Officer shall approve products or service of proposed manufacturer, suppliers, and installers, and the Contractor shall submit certification that:
 - 1. Heat welded seaming is manufacturer's prescribed method of installation.
 - 2. Installer is approved by manufacturer of materials and has technical qualifications, experience, trained personnel, and facilities to install specified items.
 - 3. Manufacturer's product submitted has been in satisfactory operation, on three installations similar and equivalent in size to this project for three years. Submit list of installations.
- B. The sheet vinyl floor coverings shall meet fire performance characteristics as determined by testing products, per ASTM test method, indicated below by Underwriters Laboratories, Inc. (UL) or another recognized testing and inspecting agency acceptable to authorities having jurisdiction.
 - 1. Critical Radiant Flux: 0.45 watts per sq. cm or more, Class I, per ASTM E648.
 - 2. Smoke Density: Less than 450 per ASTM E662.
- C. The floor covering manufacturer shall certify that products supplied for installation comply with local regulations controlling use of volatile organic compounds (VOC's).

1.4 SUBMITTALS

- A. In accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES, submit following:
- B. Manufacturer's Literature and Data:

1. Description of resilient material and accessories to be provided.
2. Resilient material manufacturer's recommendations for adhesives, weld rods, sealants, and underlayment.
3. Application and installation instructions.

C. Samples:

1. Sheet material, 38 mm by 300 mm (1-1/2 inch by 12 inch), of each color and pattern with a welded seam using proposed welding rod 300 mm (12 inches) square for each type, pattern and color.
2. Shop Drawings and Certificates: Layout of joints showing patterns where joints are expressed, and type and location of obscure type joints. Indicate orientation of directional patterns.
3. Certificates: Quality Control Certificate Submittals and lists specified in paragraph, QUALIFICATIONS.

1.5 PROJECT CONDITIONS

- A. Maintain temperature of floor materials and room, where work occurs, above 18 ° C (65 °F) and below 38 °C (100 °F) for 48 hours before, during and for 48 hours after installation. After above period, room temperature shall not fall below 13 °C (55 °F).
- B. Construction in or near areas to receive flooring work shall be complete, dry and cured. Do not install resilient flooring over slabs until they have been cured and are sufficiently dry to achieve a bond with adhesive. Follow flooring manufacturer's recommendations for bond and moisture testing.
- C. Building shall be permanently enclosed. Schedule construction so that floor receives no construction traffic when completed.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to site in original sealed packages or containers; labeled for identification with manufacturer's name and brand.
- B. Deliver sheet flooring full width roll, completely enclosed in factory wrap, clearly marked with the manufacturer's number, type and color, production run number and manufacture date.
- C. Store materials in weathertight and dry storage facility. Protect from damage due to handling, weather, and construction operations before, during and after installation. Store sheet flooring on end with ambient temperatures maintained as recommended by manufacturer.
- D. Store sheet flooring on end.
- E. Move floor coverings and installation accessories into spaces where they will be installed at least 48 hours in advance of installation.

1.7 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American Society For Testing Materials (ASTM):
- E648-09.....Critical Radiant Flux of Floor-Covering Systems Using a Radiant Energy Source.
 - E662-09.....Specific Optical Density of Smoke Generated by Solid Materials.
 - F710-08.....Practice for Preparing Concrete Floors and Other Monolithic Floors to Receive Resilient Flooring.
 - F1303-04.....Sheet Vinyl Floor Covering with Backing.
 - F1869-04.....Moisture Vapor Emission Rate of Concrete Subfloor using Anhydrous Calcium Chloride
 - F1913-04.....Sheet Vinyl Flooring without Backing
 - F2170-09.....Determining Relative Humidity in Concrete Floor Slabs using In-situ Probes
- C. Resilient Floor Covering Institute (RFCI):
- Recommended Work Practices for Removal of Resilient Floor Coverings.

1.8 SCHEDULING

Interior finish work such as drywall finishing, concrete, ceiling work, and painting work shall be complete and dry before installation. Mechanical, electrical, and other work above ceiling line shall be completed. Heating, ventilating, and air conditioning systems shall be installed and operating in order to maintain temperature and humidity requirements.

1.9 WARRANTY:

Submit written warranty, in accordance with FAR clause 52.246-21, Warranty of Construction requirements except that warranty period shall be extended to include two (2) years.

PART 2 - PRODUCTS

2.1 SHEET VINYL FLOOR COVERINGS (VSF)

- A. Sheet Vinyl Floor Coverings with backing: ASTM F 1303:

1. Type (Binder Content): Type 1
2. Wear-Layer Thickness: Grade 1.
3. Overall Thickness: 2.34 non cushioned
4. Interlayer Material: Fiberglass

5. Backing Class: Polyester Mesh

6. Wear Surface: Embossed

B. Size: Provide maximum size sheet vinyl material produced by manufacturer to provide minimum number of joints. Sheet width: 6 feet.

C. Each color and pattern of sheet flooring shall be of same production run. See Schedule of Finishes 09 06 00.

2.2 WELDING ROD:

Product of floor covering manufacturer in color shall match field color of sheet vinyl covering.

2.3 APPLICATION MATERIALS AND ACCESSORIES

A. Floor and Base Adhesive: Type recommended by sheet flooring material manufacturer for conditions of use.

B. Mastic Underlayment (for concrete floors): Provide products with latex or polyvinyl acetate resins in mix. Condition to be corrected shall determine type of underlayment selected for use.

2.4 RUBBER SHEET FLOORING (SRF)

A. Unbacked Rubber Sheet Floor Covering: ASTM F 1859

1. Type: Type 1, mottled

2. Thickness: 3mm

3. Hardness: ASTM D2240 Shore Type A, required > 75

4. Wear Surface: Smooth

B. Minimum nominal thickness 3 mm (0.12 inch); 1219 mm (4 ft) minimum width.

C. Smoke density: less than 450 per ASTM E662.

D. Color and pattern of sheet flooring of the same production run. See Schedule of Finishes 09 06 00.

E. Integral-Rubber-Base Accessories:

1. Corners: Metal inside and outside corners and end stops provided or approved by manufacturer.

2. Cold Weld between integral base and flooring with coordinated color weld compound as selected by Interior Designer.

2.5 ADHESIVES

Water resistant type recommended by the sheet flooring manufacturer for the conditions of use. VOC not to exceed 50g/L

2.6 LEVELING COMPOUND (FOR CONCRETE FLOORS)

Provide cementitious products with latex or polyvinyl acetate resins in the mix.

2.7 PRIMER (FOR CONCRETE SUBFLOORS)

As recommended by the adhesive or sheet flooring manufacturer.

2.8 EDGE STRIPS

- A. Homogeneous composition of polyvinyl chloride (PVC), high quality additives, and colorants.
- B. 25 mm (1 inch) wide, Coordinate with appropriate materials for transition type.
- C. Securely adhere to floor utilizing manufacturer's recommended adhesive.

2.9 SEALANT

- A. As specified in Section 07 92 00, JOINT SEALANTS.
- B. Compatible with sheet flooring.

PART 3 - EXECUTION**3.1 PROJECT CONDITIONS**

- A. Maintain temperature of sheet flooring above 36 °C (65 °F), for 48 hours before installation.
- B. Maintain temperature of rooms where sheet flooring work occurs above 36 °C (65 °F), for 48 hours, before installation and during installation.
- C. After installation, maintain temperature at or above 36 °C (65 °F.)
- D. Building is permanently enclosed.
- E. Wet construction in or near areas to receive sheet flooring is complete, dry and cured.

3.2 SUBFLOOR PREPARATION

- A. Concrete Subfloors: Verify that concrete slabs comply with ASTM F710.
 - 1. Installer shall examine surfaces on which resilient sheet flooring is to be installed, and shall advise Contractor, in writing, of areas which are unacceptable for installation of flooring material. Installer shall advise Contractor which methods are to be used to correct conditions that will impair proper installation. Installation shall not proceed until unsatisfactory conditions have been corrected.
 - 2. Slab substrates dry, free of curing compounds, sealers, hardeners, and other materials which would interfere with bonding of adhesive. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by Resilient Floor Covering Institute recommendations in manual RFCI-MRP.
- B. Broom or vacuum clean substrates to be covered by sheet vinyl floor coverings immediately before installation. Following cleaning, examine

substrates to determine if there is visually any evidence of moisture, alkaline salts, carbonation, or dust.

- C. Primer: If recommended by flooring manufacturer, prior to application of adhesive, apply concrete slab primer in accordance with manufacturer's directions.
- D. Correct conditions which will impair proper installation, including trowel marks, pits, dents, protrusions, cracks or joints.
- E. Fill cracks, joints, depressions, and other irregularities in concrete with leveling compound.
 - 1. Do not use adhesive for filling or leveling purposes.
 - 2. Do not use leveling compound to correct imperfections which can be corrected by spot grinding.
 - 3. Trowel to smooth surface free of trowel marks, pits, dents, protrusions, cracks or joint lines.
- F. Clean floor of oil, paint, dust and deleterious substances. Leave floor dry and cured free of residue from existing curing or cleaning agents.
- G. Moisture Testing: Perform moisture and pH test as recommended by the flooring and adhesive manufacturers. Perform test locations starting on the deepest part of the concrete structure. Proceed with installation only after concrete substrates meet or exceed the manufacturer's requirements. In the absence of specific guidance from the flooring or adhesive manufacturer the following requirements are to be met:
 - 1. Perform moisture vapor emission tests in accordance with ASTM F1869. Proceed with installation only after substrates have a maximum moisture-vapor-emission rate of 1.36 kg of water/92.9 sq. m (3lb of water/1000 sq. ft.) in 24 hours.
 - 2. Perform concrete internal relative humidity testing using situ probes in accordance with ASTM F2170. Proceed with installation only after concrete reaches maximum 75 percent relative humidity level measurement.
- H. Preparation shall include the removal of existing resilient floor and existing adhesive. Do not use solvents to remove adhesives. Coordinate with Asbestos Abatement Section if asbestos abatement procedures will be involved.
- I. Remove existing resilient flooring and adhesive completely in accordance with Resilient Floor Covering Institute recommendations in manual RFCI-WP. Solvents shall not be used.

3.3 INSTALLATION OF FLOORING

- A. Install work in strict compliance with manufacturer's instructions and approved layout drawings.

- B. Maintain uniformity of sheet floor covering direction and avoid cross seams.
- C. Arrange for a minimum number of seams and place them in inconspicuous and low traffic areas, but in no case less than 150 mm (6 inches) away from parallel joints in flooring substrates.
- D. Match edges of resilient floor coverings for color shading and pattern at seams.
- E. Where resilient sheet flooring abuts other flooring material floors shall finish level.
- F. Extend sheet vinyl floor coverings into toe spaces, door reveals, closets, and similar openings.
- G. Inform the Resident Engineer of conflicts between this section and the manufacturer's instructions or recommendations for auxiliary materials, or installation methods, before proceeding.
- H. Install sheet in full coverage adhesives.
 - 1. Air pockets or loose edges will not be accepted.
 - 2. Trim sheet materials to touch in the length of intersection at pipes and vertical projections; seal joints at pipe with waterproof cement or sealant.
- I. Keep joints to a minimum; avoid small filler pieces or strips.
- J. Follow manufacturer's recommendations for seams at butt joints. Do not leave any open joints that would be readily visible from a standing position.
- K. Follow manufacturer's recommendations regarding pattern match, if applicable.
- L. Installation of Edge Strips:
 - 1. Locate edge strips under center lines of doors unless otherwise indicated.
 - 2. Securely adhere to floor utilizing manufacturer's recommended adhesive.

3.4 WELDING

- A. Heat weld all joints of flooring and base using equipment and procedures recommended by flooring manufacturer.
- B. Welding shall consist of routing joint, inserting a welding rod into routed space, and terminally fusing into a homogeneous joint.
- C. Upon completion of welding, surface across joint shall finish flush, free from voids, and recessed or raised areas.
- D. Fusion of Material: Joint shall be fused a minimum of 65 percent through thickness of material, and after welding shall meet specified characteristics for flooring.

3.5 CLEANING

- A. Clean small adhesive marks during application of sheet flooring and base before adhesive sets, excessive adhesive smearing will not be accepted.
- B. Remove visible adhesive and other surface blemishes using methods and cleaner recommended by floor covering manufacturers.
- C. Clean and polish materials per flooring manufacturer's written recommendations.
- D. Vacuum floor thoroughly.
- E. Do not wash floor until after period recommended by floor covering manufacturer and then prepare in accordance with manufacturer's recommendations.
- F. Upon completion, Resident Engineer shall inspect floor and base to ascertain that work was done in accordance with manufacturer's printed instructions.
- G. Perform initial maintenance according to flooring manufacturer's written recommendations.

3.6 PROTECTION:

- A. Protect installed flooring as recommended by flooring manufacturer against damage from rolling loads, other trades, or placement of fixtures and furnishings.
- B. Keep traffic off sheet flooring for 24 hours after installation.
- C. Where construction traffic is anticipated, cover sheet flooring with reinforced kraft paper properly secured and maintained until removal is authorized by the Resident Engineer.
- D. Where protective materials are removed and immediately prior to acceptance, repair any damage, re-clean sheet flooring, lightly re-apply polish and buff floor.

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**SECTION 09 68 00
CARPETING**

PART 1 - GENERAL

1.1 DESCRIPTION

Section specifies carpet, edge strips, adhesives, and other items required for complete installation.

1.2 RELATED WORK

- A. Color and texture of carpet and edge strip: Section 09 06 00, SCHEDULE FOR FINISHES.
- B. Resilient wall base: Section 09 65 13, RESILIENT BASE AND ACCESSORIES.

1.3 QUALITY ASSURANCE

- A. Carpet installed by installers approved by the carpet manufacturer.
- B. Certify and label the carpet that it has been tested and meets criteria of CRI IAQ Carpet Testing Program for indoor air quality.

1.4 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Product Data:
 - 1. Manufacturer's catalog data and printed documentation stating physical characteristics, durability, resistance to fading and flame resistance characteristics for each type of carpet material and installation accessory.
 - 2. Manufacturer's printed installation instructions for the carpet, including preparation of installation substrate, seaming techniques and recommended adhesives and tapes.
 - 3. Manufacturer's certificate verifying carpet containing recycled materials include percentage of recycled materials as specified.
- C. Samples:
 - 1. Carpet: "Production Quality" samples 300 x 300 mm (12 x 12 inches) of carpets, showing quality, pattern and color specified in Section 09 06 00, SCHEDULE FOR FINISHES.
 - 2. Floor Edge Strip (Molding): 150 mm (6 inches) long of each color and type specified.
 - 3. Base Edge Strip (Molding): 150 mm (6 inches) long of each color specified.
- D. Shop Drawings: Installers layout plan showing seams and cuts for sheet carpet and carpet module.
- E. Maintenance Data: Carpet manufacturer's maintenance instructions describing recommended type of cleaning equipment and material, spotting and cleaning methods and cleaning cycles.

1.5 DELIVERY AND STORAGE

- A. Deliver carpet in manufacturer's original wrappings and packages clearly labeled with manufacturer's name, brand, name, size, dye lot number and related information.
- B. Deliver adhesives in containers clearly labeled with manufacturer's name, brand name, number, installation instructions, safety instructions and flash points.
- C. Store in a clean, dry, well ventilated area, protected from damage and soiling. Maintain storage space at a temperature above 16 degrees C (60 degrees F) for 2 days prior to installation.

1.6 ENVIRONMENTAL REQUIREMENTS

Areas in which carpeting is to be installed shall be maintained at a temperature above 16 degrees C (60 degrees F) for 2 days before installation, during installation and for 2 days after installation. A minimum temperature of 13 degrees C (55 degrees F) shall be maintained thereafter for the duration of the contract. Traffic or movement of furniture or equipment in carpeted area shall not be permitted for 24 hours after installation. Other work which would damage the carpet shall be completed prior to installation of carpet.

1.7 WARRANTY

Carpet and installation subject to terms of "Warranty of Construction" FAR clause 52.246-21, except that warranty period is extended to two years.

1.8 APPLICABLE PUBLICATIONS

- A. Publication listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American National Standards Institute (ANSI):
ANSI/NSF 140-07.....Sustainable Carpet Assessment Standard
- C. American Association of Textile Chemists and Colorists (AATCC):
AATCC 16-04.....Colorfastness to Light
AATCC 129-05.....Colorfastness to Ozone in the Atmosphere under High Humidities
AATCC 134-06.....Electric Static Propensity of Carpets
AATCC 165-99.....Colorfastness to Crocking: Textile Floor Conerings-AATCC Crockmeter Method
- D. American Society for Testing and Materials (ASTM):
ASTM D1335-05.....Tuft Bind of Pile Yarn Floor Coverings
ASTM D3278-96 (R2004)...Flash Point of Liquids by Small Scale Closed-Cup Apparatus

ASTM D5116-06.....Determinations of Organic Emissions from Indoor
Materials/Products

ASTM D5252-05.....Operation of the Hexapod Tumble Drum Tester

ASTM D5417-05.....Operation of the Vettermann Drum Tester

ASTM E648-06.....Critical Radiant Flux of Floor-Covering Systems
Using a Radiant Heat Energy Source

E. The Carpet and Rug Institute (CRI):

CRI 104-02.....Installation of Commercial Carpet

PART 2 - PRODUCTS

2.1 CARPET

A. Physical Characteristics CP-1:

1. Carpet free of visual blemishes, streaks, poorly dyed areas, fuzzing of pile yarn, spots or stains and other physical and manufacturing defects.
2. Manufacturers standard construction commercial carpet:
 - a. Broadloom; maximum width to minimum use
3. Provide static control to permanently control static build up to less than 3.5 kV when tested at 20 percent relative humidity and 21 degrees C (70 degrees F) in accordance with AATCC 134.
4. Pile Height: Maximum 5.5 mm (0.217 inch).
5. Pile Fiber: TDX nylon
6. Pile Type: Tufted Patterned Tip Shear.
7. Backing materials: Manufacturer's unitary backing designed for glue-down installation using recovered materials: Super-Lok enriched latex backing.
8. Appearance Retention Rating (ARR): Carpet shall be tested and have the minimum 3.5-4.0 Severe ARR when tested in accordance with either the ASTM D 5252 (Hexapod) or ASTM D 5417 (Vettermann) test methods using the number of cycles for short and long term tests as specified.
9. Tuft Bind: Minimum force of 40 N (10 lb) required to pull a tuft or loop free from carpet backing. Test per ASTM D1335.
10. Colorfastness to Crocking: Dry and wet crocking and water bleed, comply with AATCC 165 Color Transference Chart for colors, minimum class 4 rating.
11. Colorfastness to Ozone: Comply with AATCC 129, minimum rating of 4 on the AATCC color transfer chart.
12. Delamination Strength: Minimum of 440 N/m (2.5 lb/inch) between secondary backing.
13. Flammability and Critical Radiant Flux Requirements:

- a. Test Carpet in accordance with ASTM E 648.
- b. Class I: Not less than 0.45 watts per square centimeter.
- 14. Density: Average Pile Yarn Density (APYD):
 - a. Corridors, lobbies, entrances, common areas or multipurpose rooms, open offices, waiting areas and dining areas: Minimum APYD 6000.
 - b. Other areas: Minimum APYD 4000.
- 15. VOC Limits: Use carpet and carpet adhesive that comply with the following limits for VOC content when tested according to ASTM D 5116:
 - a. Carpet, Total VOCs: 0.5 mg/sq.m x hr.
 - b. Carpet, 4-PC (4-Phenylcyclohexene): 0.05 mg/sq.m x hr.
 - c. Carpet, Formaldehyde: 0.05 mg/sq.m x hr.
 - d. Carpet, Styrene: 0.4 mg/sq.m x hr.
 - e. Adhesive, Total VOCs: 10.00 mg/sq.m x hr.
 - f. Adhesive, Formaldehyde: 0.05 mg/sq.m x hr.
 - g. Adhesive, 2-Ethyl-1-Hexanol: 3.00 mg/sq.m x hr.
- 16. Acceptable Product: Karira 40003 as manufactured by Tandus Flooring.
- B. Physical Characteristics CP-2:
 - 1. Carpet free of visual blemishes, streaks, poorly dyed areas, fuzzing of pile yarn, spots or stains and other physical and manufacturing defects.
 - 2. Manufacturers standard construction commercial carpet:
 - a. Broadloom; maximum width to minimum use
 - 3. Provide static control to permanently control static build upto less than 3.5 kV when tested at 20 percent relative humidity and 21 degrees C (70 degrees F) in accordance with AATCC 134.
 - 4. Pile Height: Maximum 10.16 mm (0.400 inch).
 - 5. Pile Fiber: Blend of 17-240 DPF Solution Dyed UV Stabilized ASOTA Polypopylene
 - 6. Pile Type: Hobnail.
 - 7. Backing materials: Manufacturer's unitary backing designed for glue-down installation using recovered materials: composite rubber.
 - 8. Appearance Retention Rating (ARR): Carpet shall be tested and have the minimum 3.5-4.0 Severe ARR when tested in accordance with either the ASTM D 5252 (Hexapod) or ASTM D 5417 (Vettermann) test methods using the number of cycles for short and long term tests as specified.
 - 9. Tuft Bind: Minimum force of 40 N (10 lb) required to pull a tuft or loop free from carpet backing. Test per ASTM D1335.

10. Colorfastness to Crocking: Dry and wet crocking and water bleed, comply with AATCC 165 Color Transference Chart for colors, minimum class 4 rating.
 11. Colorfastness to Ozone: Comply with AATCC 129, minimum rating of 4 on the AATCC color transfer chart.
 12. Delamination Strength: Minimum of 440 N/m (2.5 lb/inch) between secondary backing.
 13. Flammability and Critical Radiant Flux Requirements:
 - a. Test Carpet in accordance with ASTM E 648.
 - b. Class I: Not less than 0.45 watts per square centimeter.
 14. Density: Average Pile Yarn Density (APYD):
 - a. Corridors, lobbies, entrances, common areas or multipurpose rooms, open offices, waiting areas and dining areas: Minimum APYD 6000.
 - b. Other areas: Minimum APYD 4000.
 15. VOC Limits: Use carpet and carpet adhesive that comply with the following limits for VOC content when tested according to ASTM D 5116:
 - a. Carpet, Total VOCs: 0.5 mg/sq.m x hr.
 - b. Carpet, 4-PC (4-Phenylcyclohexene): 0.05 mg/sq.m x hr.
 - c. Carpet, Formaldehyde: 0.05 mg/sq.m x hr.
 - d. Carpet, Styrene: 0.4 mg/sq.m x hr.
 - e. Adhesive, Total VOCs: 10.00 mg/sq.m x hr.
 - f. Adhesive, Formaldehyde: 0.05 mg/sq.m x hr.
 - g. Adhesive, 2-Ethyl-1-Hexanol: 3.00 mg/sq.m x hr.
 16. Acceptable Product: Hercules NOP Continuum as manufactured by Van Dijk Contract.
- C. Shall meet platinum level of ANSI/NSF 140.
- D. Color, Texture, and Pattern: As specified in Section 09 06 00, SCHEDULE FOR FINISHES.

2.2 ADHESIVE AND CONCRETE PRIMER

- A. Waterproof, resistant to cleaning solutions, steam and water, nonflammable, complies with air-quality standards as specified. Adhesives flashpoint minimum 60 degrees C (140 degrees F), complies with ASTM D 3278.
- B. Seam Adhesives: Waterproof, non-flammable and non-staining.

2.3 SEAMING TAPE

- A. Permanently resistant to carpet cleaning solutions, steam, and water.
- B. Recommended by carpet manufacturer.

2.4 EDGE STRIPS (MOLDING)

- A. Metal:

1. Hammered surface aluminum, pinless, clamp down type designed for the carpet being installed.
2. Floor flange not less than 38 mm (1-1/2 inches) wide, face not less than 16 mm (5/8 inch) wide.
3. Finish: Clear anodic coating unless specified otherwise in Section 09 06 00, SCHEDULE FOR FINISHES.

B. Vinyl Edge Strip:

1. Beveled floor flange minimum 50 mm (2 inches) wide.
2. Beveled surface to finish flush with carpet for tight joint and other side to floor finish.
3. Color as specified in Section 09 06 00, SCHEDULE FOR FINISHES.

2.5 LEVELING COMPOUND (FOR CONCRETE FLOORS)

- A. Provide Portland cement bases polymer modifier with latex or polyvinyl acetate resin manufactured specifically for resurfacing and leveling concrete floors. Products containing gypsum are not acceptable.
- B. Determine the type of underlayment selected for use by condition to be corrected.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION

- A. Examine surfaces on which carpeting is to be installed.
- B. Clean floor of oil, waxy films, paint, dust and deleterious substances that prevent adhesion, leave floor dry and cured, free of residue from curing or cleaning agents and existing carpet materials.
- C. Correct conditions which will impair proper installation, including trowel marks, pits, dents, protrusions, cracks or joints.
- D. Fill cracks, joints depressions, and other irregularities in concrete with leveling compound.
 1. Do not use adhesive for filling or leveling purposes.
 2. Do not use leveling compound to correct imperfections which can be corrected by spot grinding.
 3. Trowel to smooth surface free of trowel marks, pits, dents, protrusions, cracks or joint lines.
- E. Test new concrete subfloor prior to adhesive application for moisture and surface alkalinity per CRI 104 Section 6.3.1 or per ASTM E1907.

3.2 CARPET INSTALLTION

- A. Do not install carpet until work of other trades including painting is complete and dry.
- B. Install in accordance with CRI 104 direct glue down installation.
 1. Relax carpet in accordance with Section 6.4.

2. Comply with indoor air quality recommendations noted in Section 6.5.
3. Maintain temperature in accordance with Section 15.3.
- C. Secure carpet to subfloor of spaces with adhesive applied as recommended by carpet manufacturer.
- D. Follow carpet manufacturer's recommendations for matching pattern and texture directions.
- E. Cut openings in carpet where required for installing equipment, pipes, outlets, and penetrations.
 1. Bind or seal cut edge of sheet carpet and replace flanges or plates.
 2. Use additional adhesive to secure carpets around pipes and other vertical projections.
- F. Broadloom Carpet:
 1. Install per CRI 104, Section 8.
 2. Lay broadloom carpet lengthwise in longest dimension of space, with minimum seams, uniformly spaced to provide a tight smooth finish, free from movement when subjected to traffic.
 3. Use tape-seaming method to join sheet carpet edges. Do not leave visible seams.

3.3 EDGE STRIPS INSTALLATION

- A. Install edge strips over exposed carpet edges adjacent to uncarpeted finish flooring.
- B. Anchor metal strips to floor with suitable fasteners. Apply adhesive to edge strips, insert carpet into lip and press it down over carpet.
- C. Anchor vinyl edge strip to floor with adhesive apply adhesive to edge strip and insert carpet into lip and press lip down over carpet.

3.4 PROTECTION AND CLEANING

- A. Remove waste, fasteners and other cuttings from carpet floors.
- B. Vacuum carpet and provide suitable protection. Do not use polyethylene film.
- C. Do not permit traffic on carpeted surfaces for at least 48 hours after installation. Protect the carpet in accordance with CRI 104.
- D. Do not move furniture or equipment on unprotected carpeted surfaces.
- E. Just before final acceptance of work, remove protection and vacuum carpet clean.

3.5 SURPLUS MATERIAL

- A. Contractor is to provide one piece of surplus field carpet (12' x 24') to the VA. Carpet shall be of same dye lot and run as field carpet used on project.

- - - E N D - - -

SECTION 09 72 16
VINYL-COATED FABRIC WALL COVERINGS

PART 1 - GENERAL

1.1 DESCRIPTION

Section specifies vinyl coated fabric wallcovering and installation.

1.2 RELATED WORK

- A. Color, pattern, type, direction of hanging and areas to receive wallcovering: Section 09 06 00, SCHEDULE FOR FINISHES.
- B. Edge and corner guards: Section 10 26 00 WALL AND DOOR PROTECTION.

1.3 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Samples:
 - 1. Each type and pattern as specified in Section 09 06 00, SCHEDULE FOR FINISHES.
 - 2. Size: Full width of mill run.
- C. Manufacturer's Certificates:
 - 1. Compliance with CFFA W-101D.
 - 2. Wallcovering manufacturer's approval of adhesive.
- D. Manufacturer's Literature and Data:
 - 1. Primer and adhesive.
 - 2. Installation instructions.
 - 3. Maintenance instructions, including recommended materials and methods for maintaining wallcovering with precautions in use of cleaning material.

1.4 QUALITY ASSURANCE

- A. Finish one complete space with each type (color and pattern) of wallcovering showing specified colors and patterns.
- B. Use approved sample spaces as a standard for work throughout the project.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver in original unopened containers bearing the manufacturer's name, brand name, and product designation.
- B. Store in accordance with manufacturer's instructions.
- C. Handle to prevent damage to material.

1.6 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only.

- B. Chemical Fabrics and Film Association, Inc., (CFFA):
Document 2575-96.....Vinyl Coated Fabric Wallcovering
- C. American Society for Testing and Materials (ASTM)
G21-96 (R2002).....Determining Resistance of Synthetic Polymeric
Materials to Fungi

PART 2 - PRODUCTS

2.1 VINYL COATED FABRIC WALLCOVERING

- A. Content: 100% Vinyl
- B. Backing: Polyester/Cotton Osnaburg
- C. Flammability: Class A
 - 1. ASTM-E84 tunnel test
 - 2. NFPA 255
 - 3. NFPA 286
- D. Type II (Medium Duty).

2.2 ADHESIVE

- A. Use only water-based adhesive having volatile organic compounds not more than 50 g/l.
- B. Vermin and mildew resistant.

PART 3 - EXECUTION

3.1 JOB CONDITIONS

- A. Temperatures:
 - 1. Do not perform work until surfaces and materials have been maintained at minimum of 60 °F. for three days before work begins.
 - 2. Maintain minimum temperatures of 60 °F. until adhesives are dried or cured.
- B. Lighting:
 - 1. Do not proceed unless a minimum lighting level of 15 candlepower per square foot occurs.
 - 2. Measure light level at mid-height of wall.
- C. Ventilation:
 - 1. Provide uniform continuous ventilation in space.
 - 2. Ventilate for a time for not less than complete drying or curing of adhesive.
- D. Protect other surfaces from damage which may be caused by this work.
- E. Remove waste from building daily.

3.2 SURFACE CONDITION

- A. Inspect surfaces to receive wallcoverings to assure that:
 - 1. Patches and repairs are completed.
 - 2. Surface are clean, smooth and prime painted.

- B. Do not proceed until discovered defects have been corrected by other trades and surfaces are ready to receive wallcovering.
- C. Carefully remove electrical outlet and switch plates, mechanical diffusers, escutcheons, registers, surface hardware, fittings and fastenings, prior to starting work.
- D. Carefully store items for reinstallation.

3.3 APPLICATION OF ADHESIVE

- A. Mix and apply adhesives in accordance with manufacturer's directions.
- B. Prevent adhesive from getting on face of wallcovering.
- C. Apply adhesive to wallcovering back.

3.4 WALLCOVERING INSTALLATION

- A. Use wallcovering of same batch or run in an area. Use fabric rolls in consecutive numerical sequence of manufacture.
- B. Install material completely adhered, smooth, clean, without wrinkles, air pockets, gaps or overlaps.
- C. Extend wallcovering continuous behind non-built-in casework and other items which are close to but not bolted to or touching the walls.
- D. Install wallcovering before installation of resilient base. Extend wallcovering not more than 6 mm (1/4 inch) below top of resilient base.
- E. Install panels consecutively in order in which they are cut from the roll including filling spaces above or below windows, doors, or similar penetrations.
- F. Do not install horizontal seams.
- G. Except on match patterns, hang fabric by reversing alternate strips, except as recommended by the manufacturer.
- H. Cutting:
 - 1. Cut on a work table with a straight edge.
 - 2. Joints or seams that are not cut clean are unacceptable.
 - 3. Trim additional selvage to achieve a color and pattern match at seams. Overlapped seams are not allowed.
 - 4. Contractor is to double cut all seams unless specified otherwise by the wallpaper manufacturer.
 - 5. If double cutting on the wall is necessary, place a three inch strip of Type I wallcovering under pasted edge.
 - a. Do not cut into wall surface.
 - b. After cutting, remove strip and excess adhesive from seam before proceeding to next seam.
 - c. Smooth down seam in adhesive for tight bond and joint.
- I. Trim strip-matched patterns, which are not factory pre-trimmed.
- J. Inside Corners:
 - 1. Wrap wallcovering around corner.

2. Do not seam within 50 mm (2 inches) of inside corners.

3. Double cut seam.

K. Outside Corners:

1. Wrap wallcovering around corner.

2. Do not seam within 150 mm (6 inches) of outside corners.

3. Double cut seam.

3.5 PATCHING

A. Replace surface damaged wallcovering in a space as specified for new work:

1. Replace full height of surface.

2. Replace from break in plane to break in plane when same batch or run is not used. Double cut seams.

3. Adjoining differential colors from separate batches or runs are not acceptable.

B. Correct loose or raised seams with adhesives to lay flat with tight bonded joint as specified for new work.

3.6 CLEANING AND INSTALLING TEMPORARY REMOVED ITEMS

A. Remove adhesive from wallcovering as work proceeds.

B. Remove adhesives where spilled, splashed or splattered on wallcoverings or adjacent surfaces in a manner not to damage surface from which it is removed.

C. Reinstall previously removed electrical outlet and switch plates, mechanical diffusers, escutcheons, registers, surface hardware, fittings and fastenings.

3.7 SURPLUS MATERIAL

A. Contractor is to provide one full roll of surplus wall coverings of each type used on the project to the VA. Wall coverings shall be of same dye lot and batch or run as that used on the project.

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SECTION 09 91 00
PAINTING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Section specifies field painting.
- B. Section specifies prime coats which, may be applied in shop under other sections.
- C. Painting includes shellacs, stains, varnishes, coatings specified, striping or markers, and identity markings.
- D. Contractor(s) installing the herein-mentioned system(s) shall be responsible for all required identity markings and painting of their own work.

1.2 RELATED WORK

- A. Shop prime painting of steel and ferrous metals: Divisions 5, 8, 10, 11, 12, 13, and 14 sections.
- B. Prefinished flush doors with transparent finishes: Section, 08 14 00 INTERIOR WOOD DOORS.

1.3 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data:
Before work is started, or sample panels are prepared, submit manufacturer's literature, indicating brand names, product type, color, gloss level, coating composition, Federal Specification Number or manufacturers name or product number where applicable, and certificates as specified.
- C. Sample Panels:
 - 1. After painters' materials have been approved and before work is started submit sample panels showing each type of finish sheen and color specified. All paint color panels shall have each coat sprayed per manufacturers' required thickness.
 - 2. Attach labels to panel stating the following:
 - a. Federal Specification Number or manufacturers name and product number of paints used.
 - b. Product type and color.
 - c. Name of project.
 - 3. Strips showing not less than 25 mm (1 inch) wide strip of primer coat, 25 mm (1 inch) wide strip of body coat over primer coat, and 74 mm (3 inch) wide strip of finish coat over body and primer coats.

4. The VA has established and retains Q-Panels of approved colors used at this facility. The contractor shall submit his Q-Panels to the VA to match approved color and finish sheen.

D. Samples of identity markers.

1.4 DELIVERY, AND STORAGE

- A. Deliver materials to site in manufacturer's sealed container marked to show following:
 1. Name of manufacturer
 2. Product type
 3. Batch number
 4. Instructions for use
 5. Safety precautions
 6. Material Safety Data Sheets
- B. In addition to manufacturer's label, provide a label legibly printed as following:
 1. Federal Specification Number, where applicable, and name of material.
 2. Surface upon which material is to be applied.
 3. If paint or other coating, state coat types; prime, body or finish.
- C. Maintain space for storage, and handling of painting materials and equipment in a neat and orderly condition to prevent spontaneous combustion from occurring or igniting adjacent items.
- D. Store materials at site at least 24 hours before using, at a temperature between 18 and 30 °K (65 and 85 °F).

1.5 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by basic designation only.
- B. AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH):

ACGIH TLV-BKLT-1992.....Threshold Limit Values (TLV) for Chemical Substances and Physical Agents and Biological Exposure Indices (BEIs)

ACGIH TLV-DOC.....(sixth Edition...Documentation of Threshold Limit Values and Biological Exposure Indices.
- C. Federal Specifications (Fed. Spec.):

P-W-155C.....Wax Floor, Water-Emulsion

INT AMD 1

TT-C-535B(2).....Coating, Epoxy, Two Component, For Interior Use On Metal, Wood, Wallboard, Painted Surfaces, Concrete And Masonry

TT-C-542E.....Coating, Polyurethane, Oil Free, Moisture Curing

- TT-P-664D.....Primer Coating, Alkyd, Corrosion-Inhibiting,
Lead And Chromate Free, VOC-Compliant
- TT-P-791B.....Putty, Pure-Linseed-Oil Type (For Wood-Sash-
Glazing)
- TT-P-1411A.....Paint, Copolymer-Resin, Cementitious (For
Waterproofing Concrete and Masonry Walls)
- TT-P-1511B.....Paint, Latex (Gloss And Semi-gloss, Tints And
White) (For Interior Use)
- TT-P-2119.....Paint, Latex-Base, High Traffic Area, Flat And
Eggshell Finish, (Low Luster), (For Interior
Use)
- TT-S-176E(1).....Sealer, Surface, Varnish Type, Floor, Wood And
Cork
- TT-S-179B(1)S.....Sealer, Surface, Pigmented Oil, For Plaster And
Wallboard
- TT-S-711CS.....Stain, Oil Type, Wood, Interior
- D. Commercial Item Description (CID):
- A-A-1272.....Plaster, Gypsum (Spackling Compound)
- A-A-1555.....Water Paint, Powder (Cementitious, White and
Colors)
- A-A-2210.....Filler, Wood Paste
- E. Western Wood Products Association (WWPA):
- Research Note No.312- Revised Jan 30, 1985 Painting Over Knots
- F. Steel Structures Painting Council (SSPC):
- SP 1-89.....No. 1, Solvent Cleaning
- SP 2-89.....No. 2, Hand Tool Cleaning
- SP 3-89.....No. 3, Power Tool Cleaning
- G. Military Specifications (Mil. Spec.):
- MIL-P-21035B.....Paint, High Zinc Dust Content, Galvanizing,
Repair
- H. American National Standards Institute (ANSI):
- ANSI-A13.1-81.....Scheme for the Identification of Piping Systems
- I. American Society for Testing and Materials (ASTM):
- D260-86.....Boiled Linseed Oil

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Where manufacturers' products are specified herein, products of other manufacturers that are considered equivalent to those specified may be used provided they are approved "equal" products.

B. Paint Systems presently in use and approved at this facility are as follows:

1. Exterior Paint Systems for:

a. Metal (Light to Moderate Industrial Exposure, i.e. doors, frames, trim, louvers, handrails, etc.):

1) Primer Coat:

a) "XIM" Water Based Adhesion Promoting Exterior Primer/Sealer, U.M.A. (Over previously painted or factory primed surfaces).

b) "Sherwin Williams" Kem Kromik® Universal Metal Primer, B50Z Series, Rust Inhibitive, low VOC. (Over bare ferrous metal only).

2) Body and Finish Coats: "Sherwin Williams" DTM Waterborne Acrylic Semi-Gloss Coating, B66W200 Series, 100% Acrylic.

b. Metal (High Performance Industrial Exposure, i.e. Electrical and Mechanical equipment, etc.):

1) Primer Coat:

a) "XIM" Water Based Adhesion Promoting Exterior Primer/Sealer, U.M.A. (Over previously painted or factory primed surfaces).

b) "Sherwin Williams" Kem Kromik® Universal Metal Primer, B50Z Series, Rust Inhibitive, low VOC. (Over bare ferrous metal only).

2) Body and Finish Coats: "Sherwin Williams" Corothane® II Polyurethane Satin, B65-200 Series, 2-Component, VOC Compliant, Aliphatic Acrylic Modified Polyurethane.

2. Interior Paint Systems for:

a. New Gypsum Board or Previously Painted Wall and Ceiling Surfaces (General Use Areas):

1) Primer Coat (When required for use by this section): "Sherwin Williams" PrepRite® ProBlock® Interior/Exterior Latex Primer/Sealer, B51W20.

2) Body and Finish Coats: "Sherwin Williams" Harmony™ Low Odor Interior Latex Semi-Gloss Enamel, B10W951, Vinyl Acrylic. Finish (units @ 60°): 35-45.

b. New Gypsum Board and Ceiling Surfaces (Toilet Rooms, Shower Rooms, Decontamination, Clean/Sterile Areas and other areas where epoxy paint is called out in Finish Schedule):

1) Primer Coat: "Sherwin-Williams" ProGreen 200 Latex Primer

- 2) Body and Finish Coat: "Sherwin-Williams" Pro Industrial Pre-Catalyzed Epoxy, K46-150 Series, Semi-Gloss, single-component.
- c. Metal (General Purpose unless otherwise specified, i.e. doors, frames, trim, ceiling fan coil covers, TV brackets, handrails, furniture, lockers, wall and ceiling expansion joint covers, electrical panel covers, exposed piping, etc.):
 - 1) Primer Coat:
 - a) "XIM" Water Based Adhesion Promoting Exterior Primer/Sealer, U.M.A. (Over previously painted or factory primed surfaces).
 - b) "Sherwin Williams" Kem Kromik® Universal Metal Primer, B50Z Series, Rust Inhibitive, low VOC. (Over bare ferrous metal only).
 - 2) Body and Finish Coats: "Sherwin Williams" ProClassic® Waterborne Acrylic Semi-Gloss Enamel, B31W51. Finish (units @ 60°): 35-45.
- d. Metal (High Use Areas, i.e. floor grates, floor expansion joint plates, etc.):
 - 1) Primer Coat: "Sherwin Williams" Solvent Based Catalyzed Recoatable Epoxy Primer, B67 Series, 2-Component.
(Note: Contractor shall apply a test area on each different existing finish type and test for solvent attack after proper surface preparation work is completed. If no sign of attack after 24 hours allow one week before testing for adhesion).
 - 2) Body Coat: "Sherwin Williams" Tile Clad® II Solvent Based Epoxy Coating, B62 Series, 2-Component.
 - 3) Finish Coat: "Sherwin Williams" ArmorSeal® 700HS Clear Water Based Epoxy Floor Coating, B70 Series, 2-Component, (6H Pencil Hardness or Greater).
- e. Concrete Floors:
 - 1) Primer Coat:
 - a) "XIM" 400 Solvent Based Bonder and Primer/Sealer, low VOC. (Over previously painted concrete.
 - b) "Sherwin Williams" Tile Clad® II Solvent Based Epoxy Coating, B62 Series, 2-Component, reduced 25% with reducer 54. (Over new concrete surfaces).
 - 2) Body Coat: "Sherwin Williams" Tile Clad® II Solvent Based Epoxy Coating, B62 Series, 2-Component.

- 3) Finish Coat: "Sherwin Williams" ArmorSeal® 700HS Clear Water Based Epoxy Floor Coating, B70 Series, 2-Component, (6H Pencil Hardness or Greater).

C. Additional product information:

1. Identity markers options:
 - a. Pressure sensitive vinyl markers.
 - b. Snap-on coil plastic markers

2.2 PAINT PROPERTIES

- A. Use ready-mixed (including colors), except two component polyesters, paints having metallic powders packaged separately and paints requiring specified additives.
- B. Materials finely ground, uniform in consistency and readily dispersed to form a smooth and homogeneous fluid.
- C. Where no requirements are given in the referenced specifications for primers, use primers with pigment and vehicle, compatible with substrate and finish coats specified.

2.3 REGULATORY REQUIREMENTS

- A. Paint materials shall conform to the restrictions of the local Environmental and Toxic Control jurisdiction.
 1. Volatile Organic Compounds (VOC): VOC content of paint materials shall not exceed local, state or district requirements.
 2. Lead-Base Paint:
 - a. Comply with Section 410 of the Lead-Based Paint Poisoning Prevention Act, as amended, and with implementing regulations promulgated by Secretary of Housing and Urban Development.
 - b. Regulations concerning prohibition against use of lead-based paint in federal and federally assisted construction, or rehabilitation of residential structures are set forth in Subpart F, Title 24, Code of Federal Regulations, Department of Housing and Urban Development.
 3. Asbestos: Materials shall not contain asbestos.
 4. Chromate, Cadmium, Mercury, Silica: Materials shall not contain zinc-chromate, strontium-chromate, Cadmium, mercury or mercury compounds or silica sand.
 5. Human Carcinogens: Materials shall not contain any of the ACGIH-BKLT and ACGHI-DOC confirmed or suspected human carcinogens.

PART 3 - EXECUTION**3.1 JOB CONDITIONS**

- A. Safety: Observe required safety regulations and manufacturer's warning and instructions for storage, handling and application of painting materials.
 - 1. Take necessary precautions to protect personnel and property from hazards due to falls, injuries, toxic fumes, fire, explosion, or other harm.
 - 2. Deposit soiled cleaning rags and waste materials in metal containers approved for that purpose. Dispose of such items off the site at end of each day's work.
- B. Atmospheric and Surface Conditions:
 - 1. Do no exterior or interior painting in foggy, damp, or rainy weather. When building is completely enclosed, interior work may be painted.
 - 2. Paint exterior and interior surfaces when ambient temperature is between 10 and 32 degrees C (50 and 90 degrees F), except when otherwise designated in manufacturer's printed instructions. Maintain interior temperatures until paint dries hard.
 - 3. Do no exterior painting when it is windy and dusty.
 - 4. Do no painting in direct sunlight or on surfaces, which will soon be warmed by the sun.
 - 5. Apply only on clean, dry, and frost free surfaces except as follows:
 - a. Apply water thinner acrylic and cementitious paints to damp (not wet) surfaces where allowed by the manufacturer's printed instructions.
 - b. Dampened with a fine mist of water on hot dry days concrete and masonry surfaces to which water thinned acrylic and cementitious paints are applied to prevent excessive suction and to cool surface.
 - 6. Varnishing:
 - a. Apply in clean areas and in still air.
 - b. Before varnishing vacuum and dust area.
 - c. Immediately before varnishing wipe down surfaces with a tack rag.

3.2 SURFACE PREPARATION

- A. Method of surface preparation is optional, provided results of finish painting produce solid even color and texture specified with no overlays.
- B. General:
 - 1. Remove prefabricated items not to be painted such as lighting fixtures, cover plates, escutcheon plates, surface hardware and trim, fittings

and fastenings, mechanical diffusers and covers, and similar items for reinstallation after paint is dried.

2. Remove items for reinstallation and complete painting of such items and adjacent areas when item or adjacent surface is not accessible or finish is different.
3. See other sections of specifications for specified surface conditions and prime coat.
4. Clean surfaces for painting with materials and methods compatible with substrate and specified finish. Remove any residue remaining from cleaning agents used. Do not use solvents, acid, or steam on concrete and masonry.

C. Ferrous Metals:

1. Remove oil, grease, soil, drawing and cutting compounds, flux and other detrimental foreign matter by use of solvents, emulsions, cleaning compounds, or by steam cleaning, as defined in SSPC-SP 1.
2. Remove loose mill scale, rust, and paint, by hand or power tool cleaning, as defined in SSPC-SP 2 and SSPC-SP 3, except where high temperature aluminum paint is used, prepare surface in accordance with paint manufacturer's instructions.
3. Fill dents, holes and similar voids and depressions in flat exposed surfaces of hollow steel doors and frames, access panels, and similar items specified to have semi-gloss or gloss finish with metal filler compound. Finish flush with adjacent surfaces.
 - a. This includes flat head countersunk screws used for permanent anchors
 - b. Do not fill screws of item intended for removal such as glazing beads.
4. Spot prime abraded and damaged areas in shop prime coat, which expose bare metal with same type of paint used for prime coat. Feather edge of spot prime to produce smooth finish coat.
5. Spot prime abraded and damaged areas, which expose bare metal of factory, finished items with paint as recommended by manufacturer of item.

D. Zinc-Coated (Galvanized) Metal and Aluminum Surfaces Specified Painted:

1. Clean surfaces to remove grease, oil and other deterrents to paint adhesion, with toluene, xylene or similar solvents in accordance with SSPC-SP 1.
2. Spot coat abraded and damaged areas of zinc-coating which expose base metal, using zinc rich paint MIL Spec MIL -P-21035, on hot-dip zinc-coated items and spot prime with zinc dust primer, Fed Spec. TT-P-641.

E. Gypsum Plaster and Gypsum Board:

1. Remove efflorescence, loose and chalking plaster or finishing materials.
2. Remove dust, dirt, and other deterrents to paint adhesion.
3. Fill holes, cracks, and other depressions with spackling compound CID-A-A-1555 finished flush with adjacent surface, with texture to match texture of adjacent surface. Patch holes over 25 mm (1-inch) in diameter as specified in Section for plaster or gypsum board.

3.3 PAINT PREPARATION

- A. Thoroughly mix painting materials to ensure uniformity of color, complete dispersion of pigment and uniform composition.
- B. Do not thin unless necessary for application and when finish paint is used for body and prime coats. Use materials and quantities for thinning as specified in manufacturers printed instructions.
- C. Remove paint skins, then strain paint through commercial paint strainer to remove lumps and other particles.
- D. Mix two component and two-part paint and those requiring additives in such a manner as to uniformly blend as specified in manufacturers printed instructions unless specified otherwise.
- E. For tinting required to produce exact shades specified, use color pigment recommended by the paint manufacturer.

3.4 APPLICATION

- A. Start of surface preparation or painting will be construed as acceptance of the surface as satisfactory for the application of materials.
- B. Unless otherwise specified, apply paint in three coats; prime, body, and finish. When two coats applied to prime coat is the same, first coat applied over primer is body coat and second coat is finish coat.
- C. Apply each coat evenly and cover substrate completely.
- D. Allow not less than 24 hours between application of succeeding coats, except as allowed by manufacturer's printed instructions, and approved by Resident Engineer.
- E. Finish surfaces to show solid even color, free from runs, lumps, brushmarks, laps, holidays, or other defects.
- F. Apply by brush, roller or spray, except as otherwise specified.
- G. Do not spray paint in existing occupied buildings or spaces unless approved by Resident Engineer, except in spaces sealed from existing occupied spaces.
 1. Apply painting materials specifically required by manufacturer to be applied by spraying,
 2. In areas, where paint is applied by spray, mask or enclose with polyethylene, or similar air tight material with edges and seams

continuously sealed including items specified in WORK NOT PAINTED, motors, controls, telephone, and electrical equipment, fronts of sterilizes and other recessed equipment and similar prefinished items.

- H. Do not paint in closed position operable items such as access doors and panels, window sashes, overhead doors, and similar.

3.5 PRIME PAINTING

- A. After surface preparation, prime surfaces before application of body and finish coats, except as otherwise specified.
- B. Spot prime and apply body coat to damaged and abraded painted surfaces before applying succeeding coats.
- C. Shop applied prime coats shall comply with requirements of this section.
- D. Additional field applied prime coats over factory applied prime coats are required and shall comply with requirements of this section.
- E. Prime rebates for face glazing of steel.
- F. Apply prime coat in same manner as body and finish coats.
 - 1.
- G. Metals except boilers, incinerator stacks, and engine exhaust pipes:
 - 1. Steel and iron: Ferrous metal primer. Use epoxy coating where finish of epoxy coating is specified.
 - 2. Zinc-coated steel and iron: Zinc dust primer.
 - 3. Aluminum scheduled to be painted: Zinc molybdate primer.
 - 4. Terne metal: Ferrous metal primer.
 - 5. Copper and copper alloys scheduled to be painted: Zinc molybdate primer.
 - 6. Machinery not factory finished: Enamel, Alkyd, Gloss Low VOC content.
 - 7. Asphalt coated metal: Aluminum paint.
 - 8. Metal over 94 degrees C. (200 degrees F), Boilers, Incinerator Stacks, and Engine Exhaust Pipes: Heat Resistant Paint, 650 degrees C (1200 degrees F).
- H. Gypsum Board and Hardboard :
 - 1. Surfaces scheduled to have acrylic emulsion or latex emulsion finish: Use acrylic emulsion or latex emulsion respectively.
 - 2. Surfaces scheduled to receive vinyl coated fabric wallcovering: Use enamel body coat and primer.
 - 3. Use epoxy coating for surfaces scheduled to receive epoxy finish.
- I. Concrete Floors:
 - 1. Epoxy Floor Enamel.

3.6 EXTERIOR FINISHES

- A. Apply following finish coats as specified.
- B. Steel and Ferrous Metal.

1. Two coats, one body and one finish coat, on exposed surfaces, except on surfaces over 94 degrees C (200 degrees F).
 2. One coat of heat resistant paint on surfaces over 94 degrees K (200 degrees F) and on surfaces of boiler, stacks and engine exhaust pipes.
- C. Machinery without factory finish except for primer: One coat Enamel, Alkyd, Gloss Low VOC content.

3.7 INTERIOR FINISHES

- A. Apply two coats of paint, one body and one finish coat by brush and roller, over prime coat on all surfaces, unless specified otherwise.
- B. Apply two coats of paint, one body and one finish coat by spray, over prime coat as follows:
1. Fan coil and convector covers (wall and floor tye).
 2. Electrical panel covers.
 3. Expansion joint covers, to be painted.
- C. Omit body and finish coats on surfaces concealed after installation except electrical conduit containing conductors over 600 volts.
- D. Miscellaneous:
1. Apply where specified and as shown on drawings.
 2. Aluminum Paint: Two coats (AP)
 3. Gold Paint: Two coats (GP)
 4. Existing acoustical units scheduled to be repainted except acoustical units with a vinyl finish:
 - a. Clean units free of dust, dirt, grease, and other deterrents to paint adhesion.
 - b. Mineral fiber units: One coat of latex-emulsion paint (LE).
 - c. Cement board and metal units: One coat of alkyd flat (AK) or semi-gloss (SG).
 - d. Units of organic fiber or other material not having a class A rating: One coat of fire retardant paint (FR).
 5. Interstitial floor markings: One coat floor enamel (FR).

3.8 REFINISHING EXISTING PAINTED SURFACES

- A. Clean, patch and repair existing surfaces as specified under surface preparation.
- B. Remove and reinstall items as specified under surface preparation.
- C. Remove existing finishes or apply separation coats to prevent non-compatible coatings from having contact.
- D. Patched or Replaced Areas in Surfaces and Components: Apply spot prime, body, and finish coats as specified for new work to repaired areas or replaced components.

- E. Apply body and finish coats over plane surface to nearest break in plane, such as corner, reveal, or frame.
- F. In existing rooms and areas where alterations occur, clean existing stained and natural finished wood retouch abraded surfaces and then give entire surface one coat of polyurethane varnish (PV).
- G. Apply paint or transparent finish as specified.
- H. Coat knots and pitch streaks showing through old finish with knot sealer before refinishing.
- I. Sand or dull glossy surfaces prior to painting.
- J. Sand existing coatings to a featheredge so that transition between new and existing finish will not show in finished work.

3.9 PAINT COLOR

- A. Color and gloss of finish coats is as specified in this section and on the drawings.
- B. For additional requirements regarding color see Articles, REFINISHING EXISTING PAINTED SURFACE and MECHANICAL AND ELECTRICAL FIELD PAINTING SCHEDULE.
- C. Coat Colors:
 - 1. Color of priming coat: Lighter than body coat.
 - 2. Color of body coat: Lighter than finish coat.
 - 3. Color prime and body coats to not show through the finish coat and to mask surface imperfections or contrasts.
- D. Painting, Caulking, Closures, and Fillers Adjacent to Casework:
 - 1. Paint to match color of casework where casework has a paint finish.
 - 2. Paint to match color of wall where casework is stainless steel, plastic laminate, or varnished wood.

3.10 MECHANICAL AND ELECTRICAL WORK FIELD PAINTING SCHEDULE

- A. Field painting of mechanical and electrical work, consists of cleaning, touching-up abraded shop prime coats, and applying prime, body and finish coats to materials and equipment if not factory finished in space scheduled to be finished.
- B. In spaces not scheduled to be finish painted, paint as specified under paragraph G, colors.
- C. Paint various systems specified in Divisions 2, 21, 22, 23 and 24.
- D. Paint after tests have been completed.
- E. Finish painting of mechanical and electrical equipment is not required when located in interstitial spaces, above suspended ceilings, in concealed areas such as pipe and electric closets, pipe basements, pipe tunnels, trenches, attics, roof spaces, shafts and furred spaces except on electrical conduit containing feeders 600 volts or more, unless otherwise noted.

F. Omit field painting of items specified in Subparagraph, WORK NOT PAINTED.

G. Color:

1. Paint items having no color specified to match surrounding surfaces.
2. Paint colors as specified except for following:
 - a. WhiteExterior unfinished surfaces of enameled plumbing fixtures. Insulation coverings on condensate piping.
 - b. Gray.....Heating, ventilating, and air conditioning equipment (except as required to match surrounding surfaces). Water and sewage treatment equipment and sewage ejection equipment.
 - c. Aluminum Color.....Steam generation system (bare piping, fittings, hangers, supports, valves, traps and miscellaneous ironwork in contact with pipe).
 - d. Federal Safety Red.....Exposed fire protection piping hydrants, post indicators, electrical conduits containing fire alarm control wiring, and fire alarm equipment.
 - e. Federal Safety Orange.....Entire lengths of electrical conduits containing feeders 600 volts or more.

H. Apply paint on properly prepared and primed surface as specified under Articles EXTERIOR FINISHES and INTERIOR FINISHES, unless otherwise specified:

1. Exterior Locations:
 - a. Paint vent and exhaust pipes, normal temperature, under 94 degrees K (200 degrees F), roof drains, exposed piping, galvanized and zinc-copper alloy metal, and similar items.
2. Interior Locations:
 - a. Paint the following items when exposed to view:
 - 1) Metal under 94 degrees K (200 degrees F) of items such as bare piping, fittings, hangers and supports.
 - 2) Equipment and systems such as hinged covers and frames for control cabinets and boxes, electric conduits, and panel boards.
 - 3) Heating, ventilating, air conditioning, plumbing equipment, and machinery having shop prime coat and not factory finished.
 - 4) Paint existing exposed equipment and systems such as heating, ventilating, air conditioning, plumbing equipment, exposed piping and conduits, and electrical panel board covers as shown on the drawings to be painted.

- b. Apply two coats of high temperature over 650 degrees K (1200 degrees F) paint to ferrous metal surface over 94 degrees K (200 degrees F) of following items:
 - 1) Steam line flanges, bare pipe, fittings, valves, hangers and supports over 94 degrees K (200 degrees F).
- c. Paint electrical conduits containing cables rated 600 volts or more, two coats Federal Safety Orange in exposed and concealed spaces full length of conduit.
- 3. Other exposed locations:
 - a. Cloth jackets of insulation of ducts and pipes in connection with plumbing, air conditioning, ventilating refrigeration and heating systems: Two coats of acrylic emulsion.

3.11 BUILDING AND STRUCTURAL WORK FIELD PAINTING

- A. Painting and finishing of interior and exterior work except as specified under Paragraph Work Not Painted.
 - 1. Painting and finishing of new and existing work including colors and gloss of finish selected is as specified and shown on the drawings
 - 2. Painting of disturbed, damaged and repaired or patched surfaces when entire space is not scheduled for complete repainting or refinishing.
 - 3. Painting of ferrous metal and galvanized metal.
 - 4. Identity painting and safety painting.
- B. Building and Structural Work Not Painted:
 - 1. Prefinished items:
 - a. Casework, doors, metal panels, wall covering, and similar items specified factory finished under other sections.
 - b. Factory finished equipment and building components such as metal wall panels.
 - 2. Finished surfaces:
 - a. Hardware except ferrous metal.
 - b. Anodized aluminum, stainless steel, chromium plating, copper, and brass, except as otherwise specified.
 - c. Signs, fixtures, and other similar items integrally finished.
 - 3. Concealed surfaces:
 - a. Inside duct shafts, interstitial spaces, pipe basements, crawl spaces, pipe tunnels, above ceilings, attics, except as otherwise specified.
 - b. Inside walls or other spaces behind access doors or panels.
 - c. Surfaces concealed behind permanently installed casework and equipment.
 - 4. Moving and operating parts:

- a. Shafts, chains, gears, mechanical and electrical operators, linkages, and sprinkler heads, and sensing devices.
- b. Tracks for overhead or coiling doors, shutters, and grilles.
- 5. Labels:
 - a. Code required label, such as Underwriters Laboratories Inc., Inchcape Testing Services, Inc., or Factory Mutual Research Corporation.
 - b. Identification plates, instruction plates, performance rating, and nomenclature.
- 6. Galvanized metal:
 - a. Exterior chain link fence and gates, corrugated metal areaways, and gratings.
 - b. Gas Storage Racks.
 - c. Except where specifically specified to be painted.
- 7. Metal safety treads and nosings.
- 8. Gaskets.
- 9. Concrete curbs, gutters, pavements, retaining walls, exterior exposed foundation walls, and interior walls in pipe basements.
- 10. Face brick.
- 11. Structural steel encased in concrete, masonry, or other enclosure.
- 12. Structural steel to receive sprayed-on fire proofing.
- 13. Ceilings, walls, columns in interstitial spaces.
- 14. Ceilings, walls, and columns in pipe basements.

3.12 IDENTITY MARKING SCHEDULE

- A. Identify designated service in accordance with ANSI A13.1, unless specified otherwise. Apply identity markings and painting as specified on exposed piping, piping above removable ceilings, piping in accessible pipe spaces, interstitial spaces, and piping behind access panels.
 - 1. Legend shall be adhesively-applied identity marker labels.
 - 2. Apply legends adjacent to changes in direction, on branches, where pipes pass through walls or floors, adjacent to operating accessories such as valves, regulators, strainers and cleanouts a minimum of 12,200 mm (40 feet) apart on straight runs of piping. Identification next to plumbing fixtures is not required.
 - 3. Locate legends clearly visible from operating position.
 - 4. Use arrow to indicate direction of flow.
 - 5. Identify pipe contents with sufficient additional details such as temperature, pressure, and contents to identify possible hazard. Insert working pressure shown on drawings where asterisk appears for Medium, and Low Pressure designations as follows:

- a. Medium Pressure - 104 to 413 Kpa (15 to 59 psi).
 b. Low Pressure - 103 Kpa (14 psi) and below
 6. Legend name in full or in abbreviated form as follows:

PIPING	COLOR OF EXPOSED PIPING	COLOR OF BACKGROUND	COLOR OF LETTERS	LEGEND ABBREVIATIONS
Chilled Water Supply	-	Green	White	Ch. W. Sup.
Chilled Water Return	-	Green	White	Ch. W. Ret.
Air-Instrument Controls	-	Green	White	Air-Inst. Cont.
Drain Line	-	Green	White	Drain
Medium Pressure Steam	-	Yellow	Black	M.P. Stm.____*
Low Pressure Steam	-	Yellow	Black	L.P. Stm.____*
Low Pressure Condensate Return	-	Yellow	Black	L.P. Ret.____*
Hot Water Heating Supply	-	Yellow	Black	H. W. Htg. Sup.
Hot Water Heating Return	-	Yellow	Black	H. W. Htg. Ret.
Gravity Condensate Return	-	Yellow	Black	Gravity Cond. Ret.
Pumped Condensate Return	-	Yellow	Black	Pumped Cond. Ret.
Cold Water (Domestic)	White	Green	White	C. W. Dom.
Hot Water (Domestic)- Supply	White	Yellow	Black	H. W. Dom.
Sanitary Waste	-	Green	White	San. Waste
Sanitary Vent	-	Green	White	San. Vent
Storm Drainage	-	Green	White	St. Drain
Atmospheric Vent	-	Green	White	ATV
Oral Evacuation	-	Green	White	Oral Evac.
Fire Protection Water-				
Sprinkler	Red	Red	White	Auto.- Sprinkler
Standpipe	Red	Red	White	Stand.
Sprinkler	Red	Red	White	Drain
Fire Protection Electrical-Box & Cover	Red	Red	White	Fire Alarm System

7. Electrical Conduits containing feeders over 600 volts, apply legends with 50 mm (2 inch) high black numbers and letters, showing the voltage class rating. Provide legends where conduits pass through walls and floors and at maximum 6100 mm (20 foot) intervals in

between. Use labels with yellow background with black border and words Danger High Voltage Class, 5000, 15000, or 25000.

B. Fire and Smoke Partitions:

1. Identify partitions above ceilings on both sides of partitions except within shafts in letters not less than 64 mm (2 1/2 inches) high.
2. Legend message: "SMOKE PARTITION" or, "FIRE PARTITION" as applicable.
3. Locate not more than 6100 mm (20 feet) on center on corridor sides of partitions, and with a least one message per room on room side of partition.
4. Use legend color that contrasts with color of substrate.

C. Identify columns in pipe basements and interstitial space:

1. Apply stenciled number and letters to correspond with grid numbering and lettering shown.
2. Numbers and letters shall be 100 mm (4 inches) high, locate 450 mm (18 inches) below overhead structural slab.
3. Apply on four sides of interior columns and on inside face only of exterior wall columns.
4. Color:
 - a. Use black on concrete columns.
 - b. Use white or contrasting color on steel columns.

3.13 PROTECTION CLEAN UP, AND TOUCH-UP

- A. Protect work from paint droppings and spattering by use of masking, drop cloths, removal of items or by other approved methods.
- B. Upon completion, clean paint from hardware, glass and other surfaces and items not required to be painted of paint drops or smears.
- C. Before final inspection, touch-up or refinished in a manner to produce solid even color and finish texture, free from defects in work which was damaged or discolored.

- - - E N D - - -

SECTION 10 14 00
SIGNAGE

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section specifies interior signage for room numbers, directional signs, code required signs and temporary interior signs.

1.2 RELATED WORK

A. Lighted EXIT signs for egress purposes are specified under Division 26, ELECTRICAL.

B. Sign Schedule: See attached Sign Schedule for sign quantities and requirements.

1.3 MANUFACTURER'S QUALIFICATIONS

Sign manufacturer shall provide evidence that they regularly and presently manufacture signs similar to those specified in this section as one of their principal products.

1.4 SUBMITTALS

A. Submit in accordance with Section 01 33 00, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES.

B. Samples: Two sign types with backers, with letters and symbols, each type in the colors and fonts specified. Submit 2 sets. One set of samples will be retained by Resident Engineer, other returned to Contractor.

C. Plans: Sign location plan, showing location, type and total number of signs required.

D. Shop Drawings: Scaled for manufacture and fabrication of sign types. Identify materials, show joints, welds, anchorage, accessory items, mounting and finishes.

1.5 DELIVERY AND STORAGE

A. Deliver materials to job in manufacturer's original sealed containers with brand name marked thereon. Protect materials from damage.

B. Package to prevent damage or deterioration during shipment, handling, storage and installation. Maintain protective covering in place and in good repair until removal is necessary.

C. Deliver signs only when the site and mounting services are ready for installation work to proceed.

D. Store products in dry condition inside enclosed facilities.

1.6 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - B209-07.....Aluminum and Aluminum-Alloy Sheet and Plate
 - B221-06.....Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and tubes.
- C. Federal Specifications (Fed Spec):
 - MIL-PRF-8184F.....Plastic Sheet, Acrylic, Modified.
 - MIL-P-46144C.....Plastic Sheet, Polycarbonate

1.7 MINIMUM SIGN REQUIREMENTS

- A. Permanent Rooms and Spaces:
 - 1. Tactile and Braille Characters, raised minimum 0.793 mm (1/32 in). Characters shall be accompanied by Grade 2 Braille.
 - 2. Type Styles: Characters shall be Helvetica.
 - 3. Character Height: Minimum 16 mm (5/8 in) high, Maximum 50 mm (2 in).
 - 4. Mounting Location and Height: As noted in schedule. Mounted on wall adjacent to the latch side of the door and to avoid door swing and protruding objects.

1.8 COLORS AND FINISHES:

As listed below and in Signage Schedule.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Signs of type, size and design shown on the drawings and as specified.
- B. Signs complete with lettering, framing and related components for a complete installation.
- C. Provide graphics items as completed units produced by a single manufacturer, including necessary mounting accessories, fittings and fastenings.
- D. Do not scale drawings for dimensions. Contractor to verify and be responsible for all dimensions and conditions shown by these drawings. Resident Engineer to be notified of any discrepancy in drawing, in field directions or conditions, and/or of any changes required for all such construction details.
- E. The Sign Contractor, by commencing work of this section, assumes overall responsibility, as part of his warranty of work, to assure that assemblies, components and parts shown or required within the work of the section, comply with the Contract Documents. The Contractor shall

further warrant: That all components, specified or required to satisfactorily complete the installation are compatible with each other and with conditions of installations.

2.2 PRODUCTS

- A. Basis-of-Design Product: Subject to compliance with requirements, signage shall be Fusion 29 as manufactured by Takeform Architectural Graphics, One Mahar Way, Medina, NY 14103, 1.800.528.1398 or comparable product by a manufacturer approved by Architect and Resident Engineer prior to bid.
- B. The signage shall incorporate a decorative laminate face with applied graphics, including all tactile requirements in adherence to ADA specifications.
- C. All signs shall have a matching appearance and be constructed utilizing similar manufacturing processes to assure a consistent look throughout.
- D. Materials:
 - 1. Sign face shall be 0.035" (nominal) standard grade, high pressure surface laminate. Painted faces are not acceptable.
 - 2. The substrate shall be a natural fiber wood. The sign shall incorporate balanced construction with the core sandwiched between laminates to prevent warping. Laminate on the sign face only shall not be acceptable.
 - 3. Tactile lettering shall be precision machined, raised 1/32", matte PETG and subsurface colored for scratch resistance.
 - 4. Signs shall incorporate a metal accent bar. Bars shall be anodized with a brushed satin finish.

2.3 SIGN STANDARDS

- A. Specifications:
 - 1. Type Style: Helvetica Bold HB102.
 - 2. Raised Text Color: Espresso C0402.
 - 3. Insert Color/Graphic: White Paper.
 - 4. Insert Text Color: Black C0101.
 - 5. Face Material: Alaskan Slate LT7270.
 - 6. Backer Material: Mahogany Woodcut LW6929.
 - 7. Metal Accent: Natural.

2.4 SIGN TYPES

- A. General:
 - 1. The interior sign system is comprised of sign types that are called out in the Sign Schedule. A few signs within that schedule are labeled as "Custom" signs. These are signs that do not fit within the manufacturer's standard line of sign types, but will need to be

provided and fabricated with similar materials and construction to provide a consistent look.

2.5 FABRICATION

- A. The signage shall be capable of accepting paper or acetate inserts to allow changing and updating as required. Insert components shall have a non-glare acrylic window and shall be inlaid flush to sign face.
- B. The signage shall, with the exception of directories, directionals, and custom signs, be a uniform 8½" width to facilitate inserts printed on standard width paper.
- C. The signage contractor shall provide and install all signage inserts.
- D. Manufacturer shall provide a template containing layout, font, color, artwork and trim lines to allow Owner to produce inserts on laser or ink jet printer. The template shall be in an Acrobat or Word format (pdf).
- E. The laminates (front and back) shall be pressure laminated and precision machined together to a 90-degree angle. Edges shall be smooth, void of chips, burrs, sharp edges and marks.
- F. The signage shall utilize a water based adhesive. The adhesive shall be nonhazardous and shall allow for flexing and deflection of the adhered components due to changes in temperature and moisture without bond failure.
- G. All signs shall be provided with appropriate mounting hardware. Hardware shall be finished and architectural in appearance and suitable for the mounting surface.
- H. No signs are to be manufactured until final sign message schedule and location review has been completed by the Architect and Resident Engineer.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Protect products against damage during field handling and installation. Protect adjacent existing and newly placed construction and finishes as necessary to prevent damage during installation. Paint and touch up any exposed fasteners and connecting hardware to match color and finish of surrounding surface.
- B. Mount signs in proper alignment, level and plumb according to the sign location plan and the dimensions given on elevation and sign location drawings. Where otherwise not dimensioned, signs shall be installed where best suited to provide a consistent appearance throughout the project. When exact position, angle, height or location is in doubt, contact Resident Engineer for clarification.

- C. Contractor shall be responsible for all signs that are damaged, lost or stolen while materials are on the job site and up until the completion and final acceptance of the job.
- D. Remove or correct signs or installation work Resident Engineer determines as unsafe or as an unsafe condition.
- E. At completion of sign installation, clean exposed sign surfaces. Clean and repair any adjoining surfaces that became soiled or damaged as a result of installation of signs.
- F. Locate signs as shown on the Sign Location Plans.
- G. Certain signs may be installed on glass. A blank glass back up is required to be placed on opposite side of glass exactly behind sign being installed. This blank glass back up is to be the same size as sign being installed.
- H. Contractor will be responsible for verifying that behind each sign location there are no utility lines that will be affected by installation of signs. Any damage during installation of signs to utilities will be the sole responsibility of the Contractor to correct and repair.
- I. Installer to conduct a pre-installation survey prior to manufacturing to verify message schedule copy and sign locations. Each location shall be noted using low tack vinyl. Full scale renderings of directories shall also be provided. Any location discrepancy or message issues shall be submitted to the Resident Engineer and Architect for review.

- - - END - - -

First Floor

Room No.	Room Name	TakeForm Sign Type	Sign Tag	Text	Notes
112	Check-In	Custom**		BOISE VA MEDICAL CENTER	See interior elevation *Located on soffit above desk
112	Check-In	Custom** National VA Seal		**LOGO**	See interior elevation for size and mounting heights.
112	Check-In	Custom**		ADMITTING	See interior elevation for size
112A	Admitting	F29B-BH* Standard Room ID		112A ADMITTING	*Add room number to sign
112B	Triage	F29B-BH* Standard Room ID		112B TRIAGE	*Add room number to sign
112D	Housekeeping	F29A-BH Small Room ID		112D	
112E	Break Room	F29A-BH Small Room ID		112E	
112G	Electrical	F29A-BH Small Room ID		112G	
112H	Electrical	F29A-BH Small Room ID		112H	
112I	Comm/Data	F29A-BH Small Room ID		112I	
112J	Closet	F29A-BH Small Room ID		112J	
112K	Toilet	F29-BB-K2* Unisex Restroom ID		RESTROOM/SHOWER	*Add Shower to sign
116	Decontamination	F29B-BH* Standard Room ID		116 DECONTAMI	*Add room number to sign
117	Electrical	F29A-BH Small Room ID		117	
C15	Corridor	F29B-BH Standard Room ID		STAFF ONLY	
C15	Corridor	F29B-BH Standard Room ID		STAFF ONLY	
C16	Corridor	F29F-ABC Single Row/Stud Mount		*	*Coordinate with VA: Terri Cole
ST14	Stair	F29-BB-K2 Stair Identification		STAIRS	
ST14	Stair	F29-BB-K2 Stair Identification		FIRE EXIT THIS LEVEL	Locate in stair tower at door on first floor landing.
ST14	Stair	F29-BB-K2 Stair Identification		EXIT	Locate in stair tower at exit door on first floor landing.

Second Floor

Room No.	Room Name	TakeForm Sign Type	Sign Tag	Text	Notes
ST24	Stair	F29-BB-K2 Stair Identification		STAIRS	
ST24	Stair	F29-BB-K2 Stair Identification		FIRE EXIT ON LEVEL 1	Locate in stair tower at door on second floor landing.

Third Floor

Room No.	Room Name	TakeForm Sign Type	Sign Tag	Text	Notes
308C	O.R. 2	F29A-BH Small Room ID		OR 2	
308D	Anesthesia Workroom	F29A-BH Small Room ID		308D	
308F	O.R. 1	F29A-BH Small Room ID		OR 1	
309	Anesthesia Office	F29B-D1 Room ID w/Small Insert		309	
309A	ICU/Surgery Storage	F29A-BH Small Room ID		309A	
309B	Pharmacy	F29B-BH* Standard Room ID		309B PHARMACY	*Add room number to sign
310	Suture Storage	F29A-BH Small Room ID		310	
311	Orthopedic Storage	F29A-BH Small Room ID		311	
325	Classroom	F29B-BH* Standard Room ID		325 CLASSROOM	*Add room number to sign
326	ICU/Surgery Waiting Room	F29B-BH* Standard Room ID		326 WAITING ROOM	*Add room number to sign
327	Consultation Room	F29B-BH* Standard Room ID		327 CONSULTATION ROOM	*Add room number to sign
328	Women's Restroom	F29B-BB-K2 Women's Restroom		WOMEN'S RESTROOM	
329	Men's Restroom	F29B-BB-K2 Men's Restroom		MEN'S RESTROOM	
330	Nurse Station	F29B-BH* Standard Room ID		330 NURSE STATION	*Add room number to sign
330A	Gas Storage	F29A-BH Small Room ID		330A	
331	Iso Patient Room 1				
332	Iso Patient Room 2				
333	Iso Patient Room 3				
334	Iso Patient Room 4				
335	Patient Room 5				
336	Patient Room 6				

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337	Patient Room 7				
338	Patient Room 9				
339	Patient Room 10				
341	Patient Room 8				
342	Clean Linen	F29A-BH Small Room ID		342	
343	Head Nurse Office	F29B-D1 Room ID w/Small Insert		343	
344	Med Storage	F29A-BH Small Room ID		344	
345	Clean Utility	F29A-BH Small Room ID		345	
347	Nourishment	F29B-BH* Standard Room ID		347 NOURISHMENT	*Add room number to sign
348	Staff Lounge	F29A-BH Small Room ID		348	
349	Soiled Utility	F29A-BH Small Room ID		349	
350	Conference Report	F29B-F2S Conference Room		350 CONFERENCE ROOM	
351	Patient Shower	F29B-BB-K2 Unisex Restroom		PATIENT SHOWER	
352	House Staff Work Room	F29A-BH Small Room ID		352	
353	Staff Locker	F29A-BH Small Room ID		353	
354	Staff Toilet	F29B-BB-K2 Unisex Restroom		RESTROOM	
355	HSKP	F29A-BH Small Room ID		355	
356	Equipment Storage	F29A-BH Small Room ID		356	
357	Clinical Nurse Specialist	F29B-D1 Room ID w/Small Insert		357	
358	PACU	F29B-BH* Standard Room ID		358 P.A.C.U	*Add room number to sign
358	PACU	F29B-BH* Standard Room ID		358 P.A.C.U	*Add room number to sign
359		F29A-BH Small Room ID		359	
360	O.R. 3	F29A-BH Small Room ID		OR 3	
362	O.R. 4	F29A-BH Small Room ID		OR 4	
363	Clean Supply	F29A-BH Small Room ID		363	
C34	Public Corridor	F29F-ABC Single Row/Stud Mount		*	*Coordinate with VA: Terri Cole
C37	Public Corridor	F29B-BH Standard Room ID		INTENSIVE CARE UNIT DO NOT ENTER. USE PHONE FOR ASSISTANCE	
C37	Public Corridor	F29B-BH Standard Room ID			
C40	ICU Hall	F29B-BH Standard Room ID		STAFF ONLY	

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C43	Public Corridor	F29B-BH Standard Room ID		STAFF ONLY	
C44	Clean Hall	Custom**Vinyl 4" H Letters		STAFF ONLY DO NOT ENTER	Provide on public side of door.
C44	Clean Hall	Custom**Vinyl 4" H Letters		STAFF ONLY DO NOT ENTER	Provide on public side of door.
ST31	Stair	F29-BB-K2 Stair Identification		STAIRS	
ST31	Stair	F29-BB-K2 Stair Identification		FIRE EXIT ON LEVEL 1	Locate in stair tower at door on third floor landing.
ST34	Stair	F29-BB-K2 Stair Identification		STAIRS	
ST34	Stair	F29-BB-K2 Stair Identification		FIRE EXIT ON LEVEL 1	Locate in stair tower at door on third floor landing.

Penthouse

Room No.	Room Name	Sign Type	Sign Tag	Text	Notes
ST44	Stair	F29-BB-K2 Stair Identification		STAIRS	
ST44	Stair	F29-BB-K2 Stair Identification		ROOF ACCESS THIS LEVEL	Locate in stair tower at door on penthouse floor landing.
ST44	Stair	F29-BB-K2 Stair Identification		FIRE EXIT ON LEVEL 1	Locate in stair tower at door on penthouse floor landing.

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Manufacturer/Representative

Takeform	800-528-1398	www.takeform.com
Kayser Wesner	Kevin Kayser 503-235-0776	kevin@kayserwesner.com

Signage Specifications

Fusion 29
Face Material: Alaskan Slate LT7270
Backer Material: Mahogany Woodcut LW6929
Metal Accent: Natural
Font: Helvetica Bold HB102
Raised Text Color: Espresso CO402
Insert Color/Graphic: White Paper
Insert Text Color: Black CO101

Notes

- 1 All signs to be mounted at 60" from the center of the sign to the finished floor unless otherwise noted.
- 2 All signs to be mounted outside of entry door of the space specified unless otherwise noted.
- 3 All signs to be mounted on wall adjacent to the latch side of door unless otherwise noted.
- 4 Provide tactilesigns at toilet and shower rooms and stairwell entrances and exits.
- 5 Provide shop submittal drawings for all signs and types for review by design team and client.

**SECTION 10 21 23
CUBICLE CURTAIN TRACKS**

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies cubicle curtain track (C.C.T.).

1.2 RELATED WORK

Steel shapes for suspending track assembly: Section 05 50 00, METAL FABRICATIONS and Section 09 51 00, ACOUSTICAL CEILINGS.

1.3 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings: Showing layout of tracks and method of anchorage.
- C. Manufacturer's Literature and Data:
Cubicle curtain track.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver material in original package marked to identify the contents, brand name, and the name of the manufacturer or supplier.
- B. Store in dry and protected location. Store so as to not bend or warp the tracks.
- C. Do not open packages until contents are needed for installation, unless verification inspection is required.

1.5 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society for Testing and Materials (ASTM):
B221-06.....Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes.
B456-03.....Electrodeposited Coatings for Copper Plus Nickel Plus Chromium and Nickel Plus Chromium
- C. The National Association of Architectural Metal Manufacturers (NAAMM):
AMP 500 Series.....Metal Finishes Manual

PART 2 - PRODUCTS

2.1 CUBICLE CURTAIN TRACKS

- A. Surface mounted:
 - 1. Channel Tracks (Surface Mounted Type): Extruded aluminum, ASTM B221, alloy 6063, temper T5 or T6, channel shaped, with smooth inside raceway for curtain carriers.

- B. Curtain Carriers: Nylon or delrin carriers, with either nylon or delrin wheels on metal, delrin, or nylon axles. Equip each carrier with either stainless steel, chromium plated brass or steel hooks with swivel, or nickel chromium plated brass or stainless steel bead chain and hook assembly, or delrin carriers may have moulded on delrin hooks. Hook for bead chain may be the same material and finish as the bead chain or may be chromium plated steel. Provide 2.2 carriers for every 300 mm (onefoot) of each section of each track length, plus one additional carrier.
- C. End Stop Connectors, Ceiling Flanges and Other Accessories: Fabricate from the same material with the same finish as the tracks or from nylon.
- D. Hangers and Fittings: Fabricate from the same material with the same finish as the tracks. Hangers may be round or square for channel tracks and round for tubular tracks. Design fittings to be compatible with design of tracks and to safely transmit the track load to the hangers.
- E. At end of each section of track, make provision for insertion and removal of carriers. Design to prevent accidental removal of carrier. Any operating mechanism shall be removable with common tools.

2.2 FASTENERS

- A. Exposed Fasteners, Screws and Bolts: Stainless steel or chromium/nickel plated brass.
- B. Concealed Fasteners, Screws and Bolts: Hot-dip galvanized (except in high moisture areas use stainless steel).
- C. Metal Clips: Anchor curtain tracks to exposed grid of lay-in acoustical tile ceilings, with concealed metal (butterfly) type or two piece snap locking type ceiling clip of high strength spring steel. When it is not possible to install the metal ceiling clip, the cubicle curtain track may be screwed to the ceiling grid.

2.3 FINISHES

- A. Aluminum: Chemically etched medium matte, with clear anodic coating, Class II Architectural, 0.4 mils thick .
- B. Chrome/Nickel Plating: Satin or polished finish as specified, ASTM B546, minimum thickness of chromium plate as follows:
 - 1. 0.2 mil on copper alloys.
 - 2. 0.4 mil on steel.
- C. Stainless Steel: No. 4 in accordance with NAAMM Metal Finishes Manual.

2.4 FABRICATION

- A. Weld and grind smooth joints of fabricated components.

- B. Form tracks and bends of lengths that will produce the minimum number of joints. Make track sections up to 4800 mm (16 feet) without joints. Form corner bend on a 300 mm (12 inch) radius.
- C. Provide steel anchor plates, supports, and anchors for securing components to building construction.
- D. Form flat surface without distortion.
- E. Shop assemble components and package complete with anchors and fittings.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install tracks after finish painting and ceiling finishing operations are complete.
- B. Install track level and hangers plumb and securely anchor to the ceiling to form a rigid installation.
- C. Anchor surface mounted curtain tracks directly to exposed grid of lay-in acoustical tile ceilings with suitable fasteners, spaced approximately 600 mm (24 inches) on center.
- D. Anchor surface mounted curtain tracks to gypsum board ceilings with a minimum of 3 mm (1/8-inch) diameter fastenings or concealed clips spaced not more than 900 mm (three feet) on center.
- E. Securely fasten end stop caps to prevent their being forced out by the striking weight of carriers.
- F. Remove damaged or defective components and replace with new components or repair to the original condition.

3.2 ACCEPTANCE

- A. Track shall be installed neat, rigid, plumb, level and true, and securely anchored to the overhead construction.
- B. Carrier units shall operate smoothly and easily over the full range of travel.

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**SECTION 10 26 00
WALL AND DOOR PROTECTION**

PART 1 - GENERAL

1.1 DESCRIPTION

This section specifies wall guards (crash rails or bumper guards), handrail/wall guard combinations, corner guards and door/door frame protectors and high impact wall covering.

1.2 RELATED WORK

- A. Structural steel corner guards: Section 05 50 00, METAL FABRICATIONS.
- B. Armor plates and kick plates not specified in this section: Section 08 71 00, DOOR HARDWARE.
- C. Color and texture of aluminum and resilient material: Section 09 06 00, SCHEDULE FOR FINISHES.
- D. Plastic laminate impact resistant wall covering: Section 06 20 00, FINISH CARPENTRY, MILLWORK AND COUNTERTOPS.

1.3 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings: Show design and installation details.
- C. Manufacturer's Literature and Data:
 - 1. Handrail/Wall Guard Combinations.
 - 2. Wall Guards.
 - 3. Corner Guards.
 - 4. High Impact Wall covering and trim moldings
- D. Test Report: Showing that resilient material complies with specified fire and safety code requirements.

1.4 DELIVERY AND STORAGE

- A. Deliver materials to the site in original sealed packages or containers marked with the name and brand, or trademark of the manufacturer.
- B. Protect from damage from handling and construction operations before, during and after installation.
- C. Store in a dry environment of approximately 21° C (70 degrees F) for at least 48 hours prior to installation.

1.5 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - A167-99(R2009).....Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip

- B221-08.....Aluminum and Aluminum-Alloy Extruded Bars, Rods,
Wire, Shapes, and Tubes
- D256-06.....Impact Resistance of Plastics
- D635-06.....Rate of Burning and/or Extent and Time of
Burning of Self-Supporting Plastics in a
Horizontal Position
- E84-09.....Surface Burning Characteristics of Building
Materials
- C. The National Association of Architectural Metal Manufacturers (NAAMM):
AMP 500-06.....Metal Finishes Manual
- D. National Fire Protection Association (NFPA):
80-10.....Standard for Fire Doors and Windows
- E. Society of American Automotive Engineers (SAE):
J 1545-05.....Instrumental Color Difference Measurement for
Exterior Finishes.
- F. Underwriters Laboratories Inc. (UL):
Annual Issue.....Building Materials Directory

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Stainless Steel: ASTM A167, Type 302B.
- B. Aluminum Extruded: ASTM B221, Alloy 6063, Temper T5 or T6. Aluminum alloy used for colored anodizing coating shall be as required to produce specified color.
- C. Resilient Material:
1. Extruded and injection molded acrylic vinyl or extruded polyvinyl chloride meeting following requirements:
 - a. Minimum impact resistance of 1197 ps (25 ft lbs per sq.ft) when tested in accordance with ASTM D256 (Izod impact, ft.lbs. per inch notch).
 - b. Class 1 fire rating when tested in accordance with ASTM E84, having a maximum flame spread of 25 and a smoke developed rating of 450 or less.
 - c. Rated self extinguishing when tested in accordance with ASTM D635.
 - d. Material shall be labeled and tested by Underwriters Laboratories or other approved independent testing laboratory.
 - e. Integral color with all colored components matched in accordance with SAE J 1545 to within plus or minus 1.0 on the CIE-LCH scales.
 - f. Same finish on exposed surfaces.

2.2 CORNER GUARDS

- A. Resilient, Shock-Absorbing Corner Guards: Surface mounted type of 6 mm 1/4-inch corner) formed to profile shown.
 - 1. Snap-on corner guard formed from resilient material, minimum 2 mm (0.078-inch) thick, free floating on a continuous 1.6 mm (0.063-inch) thick extruded aluminum retainer. Provide appropriate mounting hardware, cushions and base plates as required.
 - 2. Provide factory fabricated end closure caps at top and bottom of surface mounted corner guards.

2.3 WALL GUARDS AND HANDRAILS

- A. Resilient Wall Guards and Handrails:
 - 1. Handrail/Wall Guard Combination: Snap-on covers of resilient material, minimum 2 mm (0.078-inch) thick, shall be free-floated on a continuous, extruded aluminum retainer, minimum 1.8 mm (0.072-inch) thick, anchored to wall at maximum 760 mm (30 inches) on center.
 - 2. Wall Guards (Crash Rails): Snap-on covers of resilient material, minimum 2.8 mm (0.110-inch) thick, shall be free-floated over 50 mm (two-inch) wide aluminum retainer clips, minimum 2.3 mm (0.090-inch) thick, anchored to wall at maximum 600 mm (24 inches) on center, supporting a continuous aluminum retainer, minimum 1.6 mm (0.062-inch) thick; or, shall be free-floated over a continuous extruded aluminum retainer, minimum 2.3 (0.090-inch) thick anchored to wall at maximum 600 mm (24 inches) on center.
 - 3. Provide handrails and wall guards (crash rails) with prefabricated and closure caps, inside and outside corners, concealed splices, cushions, mounting hardware and other accessories as required. End caps and corners shall be field adjustable to assure close alignment with handrails and wall guards (crash rails). Screw or bolt closure caps to aluminum retainer.

2.4 HIGH IMPACT WALL COVERING

- A. Fabricate from vinyl acrylic or polyvinyl chloride resilient material minimum 6mm (0.06 inch) thick designed specially for interior use.
- B. Coordinate with guard rail protection material and supplier for proper fit, installation and color.
- C. Provide adhesive as recommended by the wall covering manufacturer.
- D. Provide manufacturer's matching trim and top cap.

2.5 FASTENERS AND ANCHORS

- A. Provide fasteners and anchors as required for each specific type of installation.

- B. Where type, size, spacing or method of fastening is not shown or specified, submit shop drawings showing proposed installation details.

2.6 FINISH

- A. In accordance with NAAMM AMP 500 series.
- B. Aluminum:
1. Exposed aluminum: AAC22A31 chemically etched medium matte, with clear anodic coating, Class II Architectural, 0.4 mil thick. AA-C22A32 chemically etched medium matte with integrally colored anodic coating, Class II Architectural 0.4 mil thick.
 2. Concealed aluminum: Mill finish as fabricated, uniform in color and free from surface blemishes.
- C. Stainless Steel: NAAMM finish Number 4.
- D. Resilient Material: Embossed texture and color in accordance with SAE J 1545 and as specified in Section 09 06 00, SCHEDULE FOR FINISHES.

PART 3 - INSTALLATION

3.1 RESILIENT CORNER GUARDS

Install corner guards on walls in accordance with manufacturer's instructions.

3.2 RESILIENT HANDRAIL WALL GUARD COMBINATIONS AND RESILIENT WALL GUARDS (CRASH RAIL)

Secure guards to walls with brackets and fasteners in accordance with manufacturer's details and instructions.

3.3 HIGH IMPACT WALL COVERING

- A. Surfaces to receive protection shall be clean, smooth and free of obstructions.
- B. Apply with adhesive in controlled environment according to manufacturer's recommendations.
- C. Install manufacturer's matching trim moldings according to manufacturer's recommendations.

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SECTION 10 28 00
TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies manufactured items usually used in dressing rooms, toilets, baths, locker rooms and at sinks in related spaces.
- B. Items Specified:
 - 1. Grab Bars
 - 2. Shower curtain rods.
 - 3. Clothes hooks, robe or coat.
 - 4. Metal framed mirror.
 - 5. Mop racks.
 - 6. Soap and Shampoo Holder.
 - 7. Folding Shower Seat.
 - 8. Diaper changing station.
- C. This section also specifies custom fabricated items used in toilets and related spaces.

1.2 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Shop Drawings:
 - 1. Each product specified.
 - 2. Metal framed mirrors, showing fillers and design and installation of units when installed on ceramic tile wainscots and offset surfaces.
 - 3. Shower Curtain rods, showing required length for each location.
 - 4. Grab bars, showing design and each different type of anchorage.
 - 5. Show material and finish, size of members, and details of construction, installation and anchorage of mop racks.
- C. Manufacturer's Literature and Data:
 - 1. All accessories specified.
 - 2. Show type of material, gauges or metal thickness in inches, finishes, and when required, capacity of accessories.
 - 3. Show working operations of spindle for toilet tissue dispensers.
 - 4. Mop racks.
- D. Manufacturer's Certificates:
 - 1. Anodized finish as specified.

1.3 QUALITY ASSURANCE

- A. Each product shall meet, as a minimum, the requirements specified, and shall be a standard commercial product of a manufacturer regularly presently manufacturing items of type specified.

- B. Each accessory type shall be the same and be made by the same manufacturer.
- C. Each accessory shall be assembled to the greatest extent possible before delivery to the site.
- D. Include additional features, which are not specifically prohibited by this specification, but which are a part of the manufacturer's standard commercial product.

1.4 PACKAGING AND DELIVERY

- A. Pack accessories individually to protect finish.
- B. Deliver accessories to the project only when installation work in rooms is ready to receive them.
- C. Deliver inserts and rough-in frames to site at appropriate time for building-in.
- D. Deliver products to site in sealed packages of containers; labeled for identification with manufacturer's name, brand, and contents.

1.5 STORAGE

- A. Store products in weathertight and dry storage facility.
- B. Protect from damage from handling, weather and construction operations before, during and after installation in accordance with manufacturer's instructions.

1.6 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to the extent referenced. Publications are referenced in the text by the basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - A167-99(R2004).....Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
 - A176-99(R2004).....Stainless and Heat-Resisting Chromium Steel Plate, Sheet, and Strip
 - A269-07.....Seamless and Welded Austenitic Stainless Steel Tubing for General Service
 - A312/A312M-06.....Seamless and Welded Austenitic Stainless Steel Pipes
 - A653/A653M-07.....Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
 - B221-06.....Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes
 - B456-03.....Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium
 - C1036-06.....Flat Glass

- C1048-04.....Heat-Treated Flat Glass-Kind HS, Kind FT Coated
and Uncoated Glass
- D635-06.....Rate of Burning and/or Extent and Time of
Burning of Self Supporting Plastics in a
Horizontal Position
- F446-85 (R2004).....Consumer Safety Specification for Grab Bars and
Accessories Installed in the Bathing Area.
- A269-07.....Seamless and Welded Austenitic Stainless Steel
Tubing for General Service
- D3453-01.....Flexible Cellular Materials - Urethane for
Furniture and Automotive Cushioning, Bedding,
and Similar Applications
- D3690-02.....Vinyl-Coated and Urethane-Coated Upholstery
Fabrics
- C. The National Association of Architectural Metal Manufacturers (NAAMM):
- AMP 500 Series.....Metal Finishes Manual
- AMP 500-505-88.....Metal Finishes Manual and Finishes for Stainless
Steel
- D. American Welding Society (AWS):
- D10.4-86 (R2000).....Welding Austenitic Chromium-Nickel Stainless
Steel Piping and Tubing
- E. Federal Specifications (Fed. Specs.):
- A-A-3002.....Mirrors, Glass
- FF-S-107C (2).....Screw, Tapping and Drive
- FF-S-107C.....Screw, Tapping and Drive.
- WW-P-541E(1).....Plumbing Fixtures (Accessories, Land Use) Detail
Specification

PART 2 PRODUCTS (SEE DRAWING ACCESSORY SCHEDULE FOR BASIS-OF-DESIGN PRODUCTS)

2.1 MATERIALS

- A. Aluminum: ASTM B221, alloy 6063-T5 and alloy 6463-T5.
- B. Stainless Steel:
1. Plate or sheet: ASTM A167, Type 302, 304, or 304L, except ASTM A176 where Type 430 is specified, 0.0299-inch thick unless otherwise specified.
 2. Tube: ASTM A269, Alloy Type 302, 304, or 304L.
- C. Stainless Steel Tubing: ASTM A269, Grade 304 or 304L, seamless or welded.
- D. Stainless Steel Pipe: ASTM A312; Grade TP 304 or TP 304L.
- E. Steel Sheet: ASTM A653, zinc-coated (galvanized) coating designation G90.

F. Glass:

1. ASTM C1036, Type 1, Class 1, Quality q2, for mirrors .

2.2 FASTENERS

A. Concealed Fasteners: Steel, hot-dip galvanized (except in high moisture areas such as showers or bath tubs use stainless steel).

B. Screws:

1. ASME B18.6.4.
2. Fed Spec. FF-S-107, Stainless steel Type A.

C. Adhesive: As recommended by manufacturer for products to be joined.

2.3 FINISH

A. In accordance with NAAMM AMP 500 series.

B. Anodized Aluminum:

1. AA-C22A41 Chemically etched medium matte, with clear anodic coating, Class I Architectural, 0.7-mil thick.

C. AA-M32 Mechanical finish, medium satin.

1. Stainless Steel: NAAMM AMP 503, finish number 4.
2. Ferrous Metal:
 - a. Shop Prime: Clean, pretreat and apply one coat of primer and bake.
 - b. Finish: Over primer apply two coats of alkyd or phenolic resin enamel, and bake.

2.4 FABRICATION - GENERAL

A. Welding, AWS D10.4.

B. Grind dress, and finish welded joints to match finish of adjacent surface.

C. Form exposed surfaces from one sheet of stock, free of joints.

D. Provide steel anchors and components required for secure installation.

E. Form flat surfaces without distortion. Keep exposed surfaces free from scratches and dents. Reinforce doors to prevent warp or twist.

F. Isolate aluminum from dissimilar metals and from contact with building materials as required to prevent electrolysis and corrosion.

G. Hot-dip galvanized steel, except stainless steel, anchors and fastening devices.

H. Shop assemble accessories and package with all components, anchors, fittings, fasteners and keys.

I. Key items alike.

J. Provide templates and rough-in measurements as required.

K. Round and deburr edges of sheets to remove sharp edges.

2.5 GRAB BARS

A. Fed. Spec WW-P-541/8B, Type IV, bars, surface mounted, Class 2, grab bars and ASTM F446.

B. Fabricate of stainless steel :

1. Stainless steel: Grab bars, flanges, mounting plates, supports, screws, bolts, and exposed nuts and washers.

C. Concealed mount.

D. Bars:

1. Fabricate from 32 mm (1-1/4 inch) outside diameter tubing.
 - a. Stainless steel, minimum 1.2 mm (0.0478 inch) thick.
2. Fabricate in one continuous piece with ends turned toward walls, except swing up and where grab bars are shown continuous around three sides of showers, bars may be fabricated in two sections, with concealed slip joint between.
3. Continuous weld intermediate support to the grab bar.

E. Flange for Concealed Mounting:

1. Minimum of 3mm (1/8 inch) thick, approximately 80 mm (3 1/8 inch) high by 50 mm (2 inch) wide, with provisions for not less than three set screws for securing flange to back plate.
2. Insert grab bar through center of the flange and continuously weld perimeter of grab bar flush to back side of flange.

2.6 SHOWER CURTAIN RODS

- A. Stainless steel tubing, ASTM A569, minimum 1.27 mm (0.050 inch) wall thickness, 32 mm (1 1/4 inch) outside diameter.
- B. Flanges, stainless steel rings, 66 mm (2 5/8 inch) minimum outside diameter, with 2 holes opposite each other for 6 mm (1/4 inch) stainless steel fastening bolts. Provide a set screw within the curvature of each flange for securing the rod.
- C. Intermediate support for rods over 1829 mm (six feet) long. Provide adjustable ceiling flanges with set screws, tubular hangers and stirrups.

2.7 CLOTHES HOOKS-ROBE OR COAT

- A. Fabricate hook units either of chromium plated brass with a satin nickel finish, using 6 mm (1/4 inch) minimum thick stock, with edges and corners rounded smooth to the thickness of the metal, or 3 mm (1/8 inch) minimum radius.

2.8 METAL FRAMED MIRRORS

- A. Fed. Spec. A-A-3002 metal frame; stainless steel, type 430.
- B. Mirror Glass:
 1. Minimum 6 mm (1/4 inch) thick.
 2. Set mirror in a protective vinyl glazing tape.
- C. Frames:
 1. Channel or angle shaped section with face of frame not less than 9 mm (3/8 inch) wide. Fabricate with square corners.

2. Use 0.9.5 mm (0.0379 inch) thick stainless steel, with clear anodized finish 0.4 mils thick.

3. Filler:

- a. Where mirrors are mounted on walls having ceramic tile wainscots without a tile extension at the mirror flush with wall above, provide fillers at void between back of mirror and wall surface.
- b. Fabricate fillers from same material and finish as the mirror frame, contoured to conceal the void behind the mirror at sides and top.

D. Back Plate:

- 1. Fabricate backplate for concealed wall hanging of either zinc-coated, or cadmium plated 0.9 mm (0.036 inch) thick sheet steel, die cut to fit face of mirror frame, and furnish with theft resistant concealed wall fastenings.
- 2. Use set screw type theft resistant concealed fastening system for mounting mirrors.

E. Mounting Bracket:

- 1. Designed to support mirror tight to wall.
- 2. Designed to retain mirror with concealed set screw fastenings.

2.9 MOP RACKS

A. Minimum 865mm (34 inches) long with three holders and four hooks.

B. Clamps:

- 1. Minimum of 1.3 mm (0.050-inch) thick stainless steel bracket retaining channel with a hard rubber serrated cam; pivot mounted to channel.
- 2. Clamps to hold handles from 13 mm (1/2-inch) minimum to 32 mm (1-1/4 inch) maximum diameter.

C. Support:

- 1. Minimum of 1 mm (0.0375 inch) thick stainless steel hat shape channel to hold clamps away from wall.
- 2. Drill wall flange for 3 mm (1/8 inch) fasteners above and below clamp locations.

D. Secure clamps to support with oval head machine screws or rivets into continuous reinforcing back of clamps.

E. Finish on Stainless Steel: AMP 503-No. 4.

2.10 SOAP AND SHAMPOO HOLDER AT SHOWERS

A. Porcelain unit recessed into wall.

- 1. Single unit with 1 soap compartment and 1 tall shampoo compartment.
- 2. Color as selected by Architect from manufacturer's full range of colors.

2.11 L-SHAPED FOLDING SHOWER SEAT**A. Frame:**

1. Type-304, satin-finish stainless steel, 16-gauge (1.6mm), 1-1/4" (32mm) square tubing, and 18-gauge (1.2mm), 1" (25mm) diameter seamless tubing.

B. Seat:

1. One-piece, 1/2" (13mm) thick, solid phenolic with matte-finish, ivory-colored, melamine surfaces, and black phenolic-resin core.
2. Seat shall be reversible for left- or right-hand installation in the field.
3. Seat shall be attached to wall by two 3" diameter mounting flanges constructed of type 304, 3/16" (5mm) thick stainless steel with satin finish.
4. Shower seat shall comply with barrier-free accessibility guidelines.
5. Seat shall be able to lock in upright position when not in use. L-shaped folding shower seats when properly installed and maintained, have sufficient strength to support a single user up to a maximum static load of 360 lbs (163 kg).

2.12 BABY-CHANGING STATION**A. Exterior:**

1. Type-304, satin-finish stainless steel, 18-gauge.

B. Interior:

1. One-piece, high-density, blow molded polyethylene.grey-colored.
2. Microban antimicrobial treated.

C. Hinge:

1. Reinforced continuous steel hinge.

D. Mounting plate:

- a. 11 gauge mounting plates and mounting hardware.

E. Operation:

1. Concealed pneumatic cylinder for controlled opening and closing.

PART 3 - EXECUTION**3.1 PREPARATION**

- A. Before starting work notify Resident Engineer in writing of any conflicts detrimental to installation or operation of units.
- B. Verify with the Resident Engineer the exact location of accessories.

3.2 INSTALLATION

- A. Set work accurately, in alignment and where shown. Items shall be plumb, level, free of rack and twist, and set parallel or perpendicular as required to line and plane of surface.

- B. Toggle bolt to steel anchorage plates in frame partitions or hollow masonry.
- C. Install accessories in accordance with the manufacturer's printed instructions and ASTM F446.
- D. Install accessories plumb and level and securely anchor to substrate.
- E. Install accessories in a manner that will permit the accessory to function as designed and allow for servicing as required without hampering or hindering the performance of other devices.
- F. Align mirrors, dispensers and other accessories even and level, when installed in battery.
- G. Install accessories to prevent striking by other moving, items or interference with accessibility.

3.3 SCHEDULE OF ACCESSORIES - SEE DRAWINGS FOR ACCESSORY SCHEDULE

3.4 CLEANING

After installation, clean as recommended by the manufacturer and protect from damage until completion of the project.

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SECTION 10 44 13
FIRE EXTINGUISHER CABINETS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section covers recessed fire extinguisher cabinets and fire extinguishers.

1.2 SUBMITTALS

- A. Submit in accordance with Section 013323, SAMPLES AND SHOP DRAWINGS.
- B. Manufacturer's Literature and Data: Fire extinguisher cabinet including installation instruction and rough opening required.

PART 2 - PRODUCTS

2.1 FIRE EXTINGUISHER CABINET

- A. Semi-recessed type with 64mm (2½ inch) radius rolled edge, Cosmopolitan Series 1037V17 by J.L. Industries with Cosmic 10E extinguisher.

2.2 FABRICATION

- A. Form body of cabinet from 0.9 mm (0.0359 inch) thick sheet steel.
- B. Fabricate door and trim number 304 stainless steel all face joints fully welded and ground smooth.
 - 1. Glaze doors with 6 mm (1/4 inch) thick fully tempered float glass complying with ASTM C 1048, Condition A, Type 1, Quality g3, kind FT, Class 1 (clear).
 - 2. Design doors to open 180 degrees.
 - 3. Provide continuous hinge, flush cup pull (ADA compliant), and adjustable roller catch.
 - 4. Identify fire extinguisher in cabinet with FIRE EXTINGUISHER lettering applied to door. Lettering to be vertical, Black.
- C. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. J.L. Industries
 - 2. Larsen's Manufacturing Co.
 - 3. Potter-Roemer, Inc.
 - 4. Or approved equal

2.3 FIRE EXTINGUISHER

- A. General: Provide fire extinguisher in each cabinet shown on drawings.
- B. Multipurpose Dry Chemical Type: UL-rated 4A:60B:C, 10-lb nominal capacity, in enameled steel container.

2.4 FINISH

- A. Finish interior of cabinet body with baked-on semi-gloss white enamel.
- B. Finish door and trim with manufacturer's standard number 304 stainless steel, with number 4 satin finish.

PART 3 - EXECUTION

- A. Install fire extinguisher cabinets in prepared openings and secure in accordance with manufacturer's instructions.
- B. Install cabinet so that bottom of cabinet is 991 mm (39 inches) above finished floor.

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**SECTION 10 50 00
LOCKERS**

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Staff lockers.
- B. Locker benches.

1.2 RELATED WORK

Color of Finish: Section 09 06 00, SCHEDULE OF FINISHES.

1.3 QUALITY ASSURANCE

Products of manufacturers regularly engaged in manufacturing lockers of type specified and shown.

1.4 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, Shop Drawings, Product Data, and Samples.
- B. Submit full range of manufacturer's standard colors for initial selection.
- C. Manufacturer's Literature and Data for lockers and locks:
- D. Key list, showing lock and key number, locker number, room number and building number where locker is located.

1.5 APPLICABLE PUBLICATIONS

- A. Publications listed below form a part of this specification to extent referenced. Publications are referenced in text by basic designation only.
- B. Federal Specifications (Fed. Spec.):
 - AA-L-00486H(1).....Lockers, Clothing, Steel
 - NOTICE 1
 - FF-B-588C(1).....Bolt, Toggle; And Expansion Sleeve, Screw
 - FF-S-325.....Shield, Expansion; Nail, Expansion; And Nail
 - INT AMD 3 Drive Screw (Devices, Anchoring, Masonry)
- C. Military Specifications:
 - MIL-W-28581B.....Wardrobes: Clothing, Composite Wood and Metal

1.6 DELIVERY, STORAGE AND HANDLING

- A. Do not store outside. Protect from damage.
- B. Handle to prevent damage to lockers or building components.

PART 2 - PRODUCTS

2.1 STAFF LOCKERS

- A. Metal lockers with Z-Style door and shelf, double tier.

1. Basis-of-Design Product: Subject to compliance with requirements, available manufacturers offering comparable products to the following:
 - a. General Storage Systems (GSS), Decor Tri-Lok Pro-Line Club Lockers.
 - b. Body: Fabricated from minimum 24 gauge steel. Intermediate shelf shall be 20 gauge minimum.
 - c. Frame: Fabricate from welded channel sections. Incorporate ventilation slots into frame.
 - d. Doors: Full double pan box welded construction with a 16 gauge outer door panel and a full width 24 gauge inner door panel.
 - e. Number plates: Number consecutively within each room or space.
 - f. Size: 305 mm (12-inches) wide and 457 mm (18 inches) deep, 1981 mm (72-inches) high.
 - g. Accessories: Provide sloping tops or note less than 0.953mm (0.036-inch) thick sheet steel, flush filler plates of not less than 0.953mm (0.036-inch) thick sheet steel and bases of not less than 1.5 mm (0.0598-inch) thick sheet steel.
 - h. Color: As selected by architect from manufacturer's full range.

2.2 FASTENERS

- A. For securing lockers to adjoining construction; toggle or expansion bolts, 6 mm (1/4-inch) in diameter, or other appropriate size and type of fastenings as required for each specific type installation.
- B. Use toggle bolts, Fed. Spec. FF-B-588, in hollow masonry and frame construction.
- C. Use expansion bolts, Fed. Spec. FF-S-325 in solid masonry or concrete. Do not use lead, fiber or plastic shield.
- D. Where type, size, or spacing of anchorage is not shown or specified, show on shop drawings proposed fastenings and method of installation.

2.3 LOCKS, KEYING AND NUMBERING

- A. Locks:
 1. Staff lockers:
 - a. Provide locking mechanism capable of being secured with a user-supplied padlock, either keyed padlock or combination padlock.
 - b. Number lockers consecutively within a space or room.

2.4 BENCHES

- A. Locker benches shall be laminated maple, 1-1/4" finished thickness. All corners are to be rounded and sanded. Top, edges and bottom shall have a minimum of one coat clear finish.

- B. Bench tops shall be 9-1/2" wide and furnished in whole foot increments as shown on the plans.
- C. Tops to be mounted on pedestals consisting of 1-1/4" O.D. tubing with minimum 10 gauge steel flanges welded to each end. Finish pedestals to match lockers.
- D. Overall height of bench assembly shall be 17-1/2".

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Assemble lockers as specified by manufacturer.
- B. Touch-up any abraded or damaged finish with matching paint.
- C. Clean or repair all dirt or stains.
- D. Remove any protective wrappings from lockers and components.
- E. Staff lockers:
 - 1. Closures: Secure closures with sheet metal screws to tubular or channel members of units, or with bolts where exposed on inside.
 - 2. Filler Plates: Secure filler plates to top members unless otherwise shown. Secure filler plates more than six inches in width to top edge and fasten by screws to a continuous 25 by 25 mm (1 by 1-inch, 1 mm (0.0747-inch) thick steel angle secured to ceiling with toggle bolts.
 - 3. Base: Install per manufacturer's recommendations.
 - 4. Tops: Install sloping tops or filler plates as specified.
- F. Benches: Provide no fewer than two pedestals for each bench, uniformly spaced. Securely fasten tops of pedestals to undersides of bench tops, and anchor bases to floor.

3.2 ANCHORAGE

- A. To Walls: Except as otherwise shown, anchor lockers through back near top and bottom with 5 mm (3/16-inch) toggle bolt in hollow construction.
 - 1. Do not anchor to wood grounds.
 - 2. Fastenings and anchorage for lockers to metal stud partitions: Use toggles bolts or as shown.
- B. Sloping Tops: Filler Plates, and Closures
 - 1. Fasten sloping tops with oval-head sheet metal screws inserted from interior including flush closures on exposed ends of sloping tops.
 - 2. Closures for openings larger than 6 mm (1/4-inch) wide between lockers and adjacent walls; either flat steel closure strips, scribed to required contours, 1 mm or (0.0359-inch) thick machined formed fillers with returns.
 - 3. Finish same color as lockers.
 - 4. Spacers:

- a. Where lockers are fastened to walls, provide spacers, permanently mounted on lockers for fasteners.
 - b. Thickness of spacers required to fill space between back of locker and wall face.
 - c. Designed so wall face or back of locker is not deformed when fastener is tightened.
- C. Do not expose bolts on front of lockers.
- 3.3 ADJUSTING**
- A. Adjust lockers so doors operate without binding and do not require force over two pounds to close and lock in position.
 - B. Adjust locks to operate freely without dead bolt binding or bearing against sides of strike.

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